SOLUTIA Solutions for a better life.

September 25, 2017

955365

Ms. Stephanie Linebaugh
U.S. EPA – Region 5
77 West Jackson Blvd (SR-6J)
Chicago, Illinois 60604-3590

RE: Sauget Area 1 Site – Metering House Completion Report

Dear Stephanie;

The SA 1 Group is requesting approval of the attached Completion Report for the new Metering House project.

Due to the size of the document, we are including two copies of the text (only), each with a CD of the complete document (text and all attachments).

This project has been successfully completed. All leachate from the Judith Lane Containment Cell is now being pumped to the American Bottoms POTW, in compliance with our American Bottoms Discharge Permit.

Any questions, please advise.

Sincerely,

Steven D. Smith
Project Coordinator

cc: Paul Lake – Illinois EPA (two hard copies of text and two CDs of the text and attachments)

Construction Completion Report: Leachate Management System Installation and Piping Connection to POTW

Solutia Inc.

Project Number: 60514419

September 5, 2017

Quality information

Prepared by	Checked by	Approved by

Revision History

Revision	Revision date	Details	Authorized	Name	Position

Distribution List

# Hard Copies	PDF Required	Association / Company Name

Prepared for:

Solutia Inc.
575 Maryville Centre Dr
St. Louis, Missouri 63141

Prepared by:

AECOM
1001 Highlands Park Drive West
St. Louis
MO, 63110
USA
aecom.com

Table of Contents

Figures

As-Built Drawings

Attachments

1. Project Information and Background

This Construction Completion Report was prepared by AECOM Design and Consulting Services Group (AECOM) for the Leachate Management System and Piping Connection Project (Project) at the Judith Lane Containment Cell (JLCC) located in Sauget and Cahokia, Illinois. The Project location is presented in **Figure 1**.

This Project provided new discharge lines from the JLCC primary, secondary, and capillary layer pumps, as well as a new Metering House (which includes an automated control system and associated appurtenances). From the Metering House, the new pipes discharge into a manhole located on Queen Avenue, which is connected to the American Bottoms Regional Wastewater Treatment System.

Note that during the start-up of this Project, it was determined that pumping groundwater from the capillary layer should be discontinued. The capillary pump has been removed and the capillary pipe line has been valved off.

2. Construction Oversight Activities

AECOM provided construction oversight activities on behalf of Solutia for this Project. AECOM staff was onsite periodically during construction activities to confirm adherence to design drawings and specifications. Field changes were documented and approved by Solutia and the AECOM design engineer. Daily field reports and photographs are attached as **Attachment 1 – AECOM Daily Field Reports and Summary Photographic Log**.

3. Completed Work

The work discussed within this document includes the Metering House installation, system piping and connections, electrical system installation, and site restoration. Site construction began on October 31, 2016 and AECOM confirmed the construction to be complete on August 1, 2017.

3.1 Metering House Installation

The Metering House installation included the components listed below, as shown on **Figure 2** and **As-Built Drawings – Mechanical**:

- A 20-foot x 20-foot pad consisting of compacted aggregate placed atop geotextile. The top of the pad was set at 410 feet Above Mean Sea Level (AMSL).
- A 12-foot x 10-foot x 7-foot prefab shed (manufactured by Cook – Model number 106738) was installed on the aggregate pad.
- A 15-foot wide coarse aggregate road (12-inch compacted aggregate base atop geotextile) was extended south to the former sampling shed (see **Attachment 2 – Geotex 104F Specifications**).
- A 25-foot section of 12-inch corrugated metal pipe (CMP) culvert was installed beneath the road extension to provide for stormwater drainage from the west to east under the road extension.
- A 3-foot wide coarse aggregate walkway was extended north from the metering house to the Weise Parking Lot (6-inch compacted aggregate base atop geotextile).
- A 6-foot high chain link fence with three strands of barbed wire was installed around the metering house. A 48-inch wide gate was installed in the north side of the fence for access from Queeny Avenue, and a 10-foot wide double gate was installed in the south side of the fence for access from the landfill site.

3.2 System Piping and Connections

System piping and connections included the components listed below, as shown on **Figure 2** and **As-Built Drawings – Mechanical**:

- The three new 1.5-inch primary leachate, secondary leachate, and capillary lines were connected to three new 1.25-inch piping runs to each pump with stainless steel camlock fittings.
- Three 1.5-inch HDPE (SDR 11) lines were installed to convey water from the primary and secondary leachate pumps and the capillary pump to the metering house. The pipes were buried with a minimum of 40-inch cover above the pipe. Underground utility warning tape and tracer wire was centered in the trench backfill.
- The primary, secondary, and capillary lines emerge inside the metering house, where various control and monitoring devices were installed on each line, including a check valve, an air release vent valve, and magnetic flow meter. The primary and secondary discharge piping combine into a single, 4-inch HDPE (SDR 11) pipe. See **Attachment 3 - Ball Check Valve Specifications**, **Attachment 4 – Air Release Vent Valve Specifications**, and **Attachment 5 – Badger M2000 Flowmeter Operator's Manual** for additional information related to the control and monitoring devices.
- A 2-inch and a 4-inch HDPE (SDR 11) line were installed from the metering house to the existing sanitary sewer on Queeny Avenue. Underground utility warning tape and tracer wire was centered in the trench backfill (see **Attachment 6 – HDPE DR-11 Piping Specifications**).
- The 2-inch and 4-inch lines were connected to the existing sanitary sewer via the existing manhole on Queeny Avenue.

- All HDPE (SDR 11) lines were hydrostatically tested prior to operation. Copies of the hydrostatic test reports are provided as **Attachment 7 – Hydrostatic Test Reports**.

Connection to the manhole was made in accordance with the applicable portions of "Illinois Recommended Standards for Sewage Works" (Illinois Administrative Code, Title 35, Subtitle C, Chapter II, Part 370). The connections utilized a Link Seal to provide a seal at the manhole (see **Attachment 8 – LinkSeal Specifications**).

3.3 Electrical System Installation

The components of the completed electrical work are listed below, and are shown on the **As-Built Drawings – Electrical**.

- Extension of existing underground 480v electrical power supply from existing above-ground junction box to the new Metering House;
- Installation of an electrical transformer and main circuit breaker load center at the new Metering House (see **Attachment 9 – Transformer Specifications**);
- Installation of new underground electrical power supply for existing pumps from new Metering House to new pump electrical junction boxes;
- Installation of three level transducers with transducer mounts; one for each of the leachate collection, leachate detection, and capillary layer sumps (see **Attachment 10 – Transducer Operator's Manual**). Each pump with transducer mount was installed in the pipe casing as noted below:

Pump ID	Pump Elevation (ft. amsl)*
Primary	401
Secondary	399
Capillary	396.5

*Subject to change based on permit requirements and operational changes.

- Installation of three magnetic flowmeters;
- Installation of a Sensaphone liquid detection sensor (see **Attachment 11 – Sensaphone Water Sensor**);
- Installation of door open sensor, electrical outlets, and interior and exterior lighting at the new Metering House;
- Installation of the Programmable Logic Controller (PLC) panel, three pump control motor starters, three transducer control panels, three flow meter control panels, and one cellular auto dialer system (see **Attachment 12 – Pump Motor Starter Specifications**, **Attachment 13 – EPG Operations and Maintenance Manuals**, and **Attachment 14 – Sensaphone 800 Operator's Manual**); and
- All electrical work conformed to all National Electrical Code (NEC) and local codes and procedures. See the attached **As-Built Drawings – Electrical** for specific equipment locations, sizes, and details.

3.3.1 Pump Operation and Installation

The pump system is a level control on/off system designed to operate each pump independently upon changes in liquid levels as sensed by individual level transducers. When the auto signal is received from the motor starter, the panel has control of the pump. In auto mode, each pump will start at the pump "start level" set point and will continue to run until the liquid level decreases to the pump "stop level" set point, as sensed by the level transducer. Set points for individual transducers include:

Pump ID	Low Setpoints*	High Setpoints*	Alarm Setpoints*
Primary	0.3 feet	0.5 feet	1.0 feet
Secondary	0.3 feet	0.5 feet	1.0 feet
Capillary	1.0 feet	1.8 feet	2.0 feet

*Note – Subject to change based on permit requirements and operational changes.

The pump system is set up with three conditions that will stop the pumps and initiate an alarm. The three shutdown conditions are:

- Level transducer fail;
- No flow condition; and
- Metering House flood condition (i.e. liquid detected on Metering House floor).

3.3.2 System Control

The pump system is operated by an EPG Series LMSA 2000 programmable logic controller and includes the pump controllers, transducer displays, flow meter displays, a data logger, and a cellular auto dialer system. The pump controllers include a “Hand-Off-Auto” selector switch to allow operation of the pumps in either manual or automatic mode, and provides for local display of the following:

- Auto-operate lights for each of the three pumps;
- Flow rate and total flow output from the leachate collection, leachate detection, and capillary layer magnetic flow meters;
- Low flow warnings for each of the three flow meters;
- High-high set points for each of the three level transducers;
- High-High level alarm lights for each of the three pressure transmitters;
- Level transducer fail light for each of the three level transmitters;
- Pump fail light for each pump;
- Door open light (for Metering House door); and
- Flooding light (for Metering House floor liquid sensor).

The data logger is configured to log the liquid level in each of the primary leachate collection, secondary leachate collection, and capillary layers, the flow output, pump starts and stops, high-high level alarm, and low flow warnings.

The auto dialer system was programmed to provide notification of the following alarm or warning conditions (See **Attachment 15 – Alarm Conditions**):

- Pump fail;
- High-High alarm;
- Low flow warning;
- Flooding alarm;
- Door open alarm;

- Metering House low temperature (i.e. <42°F); and
- Power outage.

The control wiring connections are shown on the **Electrical As-Built Drawings - Electrical**.

3.4 Removals, Waste, and Site Restoration

The existing 1.5-inch underground portion of tubing from the capillary and leachate pumps was removed. The existing valve, sampling shed, and above ground piping, valves and other appurtenances, with the exception of the existing 6-inch riser pipe and blind flange, were disassembled and disposed of. The 6-inch line from the former sampling shed to the treatment building remains onsite. The original electrical components that powered the primary, secondary, and capillary pumps were disassembled and disposed of. Electrical conduit was abandoned in place.

During excavation, PCB contaminated soil was encountered while excavating the trench on Non- property immediately adjacent to Site G, south of Queeny Avenue. The waste totaled approximately 113 tons and was disposed of by Midwest Sanitation at the US Ecology TSCA approved landfill in Belleville, Michigan. The PCB contaminated soil was disposed of according local, state, and federal regulations (see **Attachment 16 – Waste Manifests**).

Fill material was placed to restore any disturbed areas back to original grades. A final surface of course aggregate was placed to restore any disturbed areas on the Non- property and shoulder of Queeny Avenue to their original condition or better.

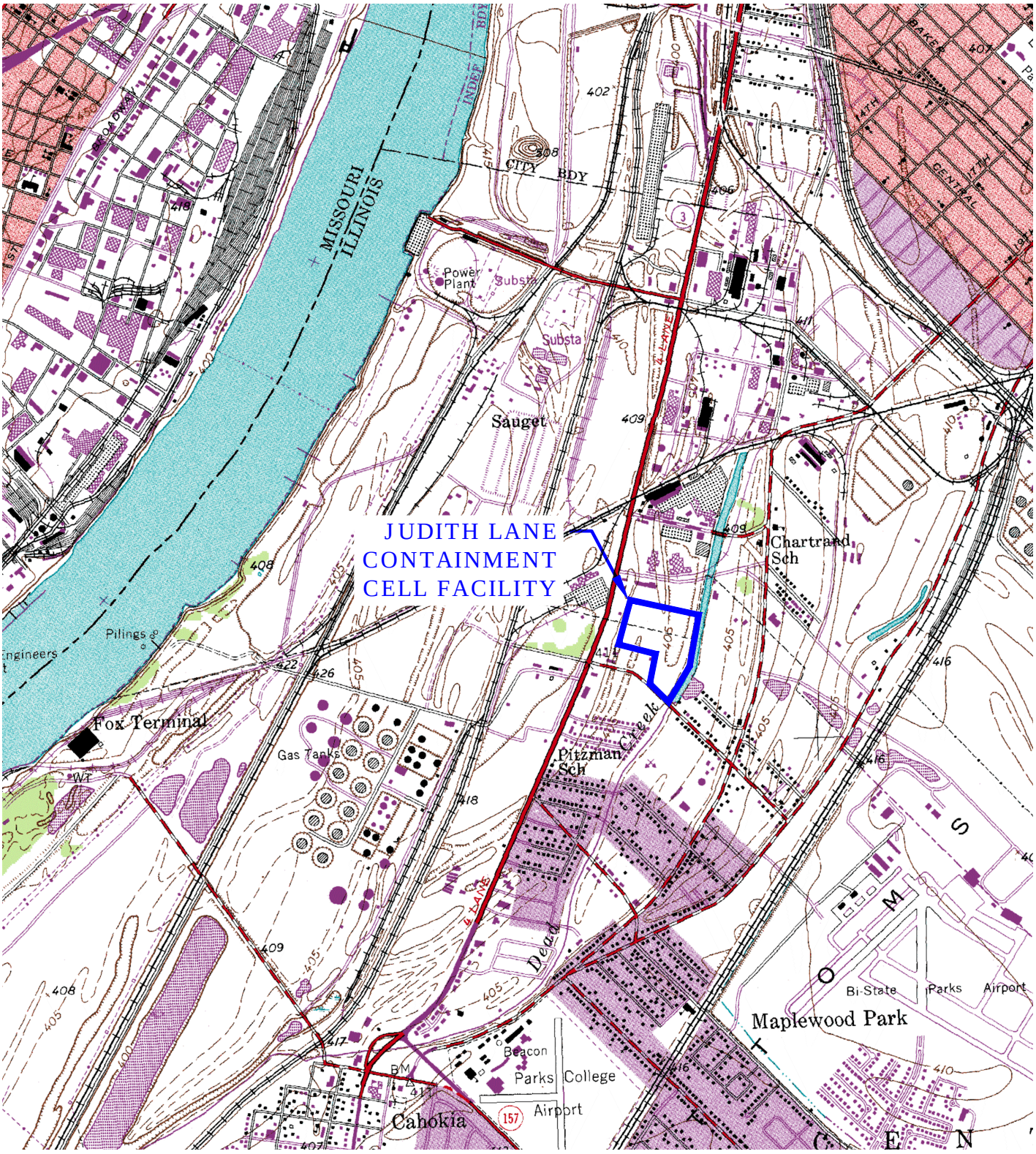
3.5 System Commissioning

System commissioning began in March 2017 to confirm system logic, operation of pumps, alarms, and other equipment by AECOM and GRP Mechanical. The system was deemed operational on August 1, 2017. Further system adjustments will likely be necessary based on operational data and various permitting requirements. A summary of items tested during system commissioning is provided below.

- Tested and confirmed operation of low, high, and high-high transducer set points for primary, secondary, and capillary transducers;
- Tested and confirmed operation of primary, secondary, and capillary pumps in manual and automatic mode;
- Tested and confirmed operation of primary, secondary, and capillary pumps under “no flow” condition;
- Tested and confirmed operation of primary, secondary, and capillary pumps under “dry” condition;
- Tested and confirmed operation of “door open” alarm;
- Tested and confirmed operation of low temperature alarm;
- Tested and confirmed operation of flood sensor alarm;
- Tested and confirmed each alarm was sent out via auto dialer;
- Confirmed there was no backup at manhole during simultaneous pump operation; and
- Confirmed datalogging operation.

The parts list generated as part of the commissioning process is provided in **Attachment 17 – Parts List**.

Figures



SOURCE: MAP TAKEN FROM ELECTRONIC USGS DIGITAL RASTER GRAPHIC 7.5 MINUTE TOPOGRAPHIC MAP OF CAHOKIA, ILLINOIS. REVISED 1993.

N

0 2000

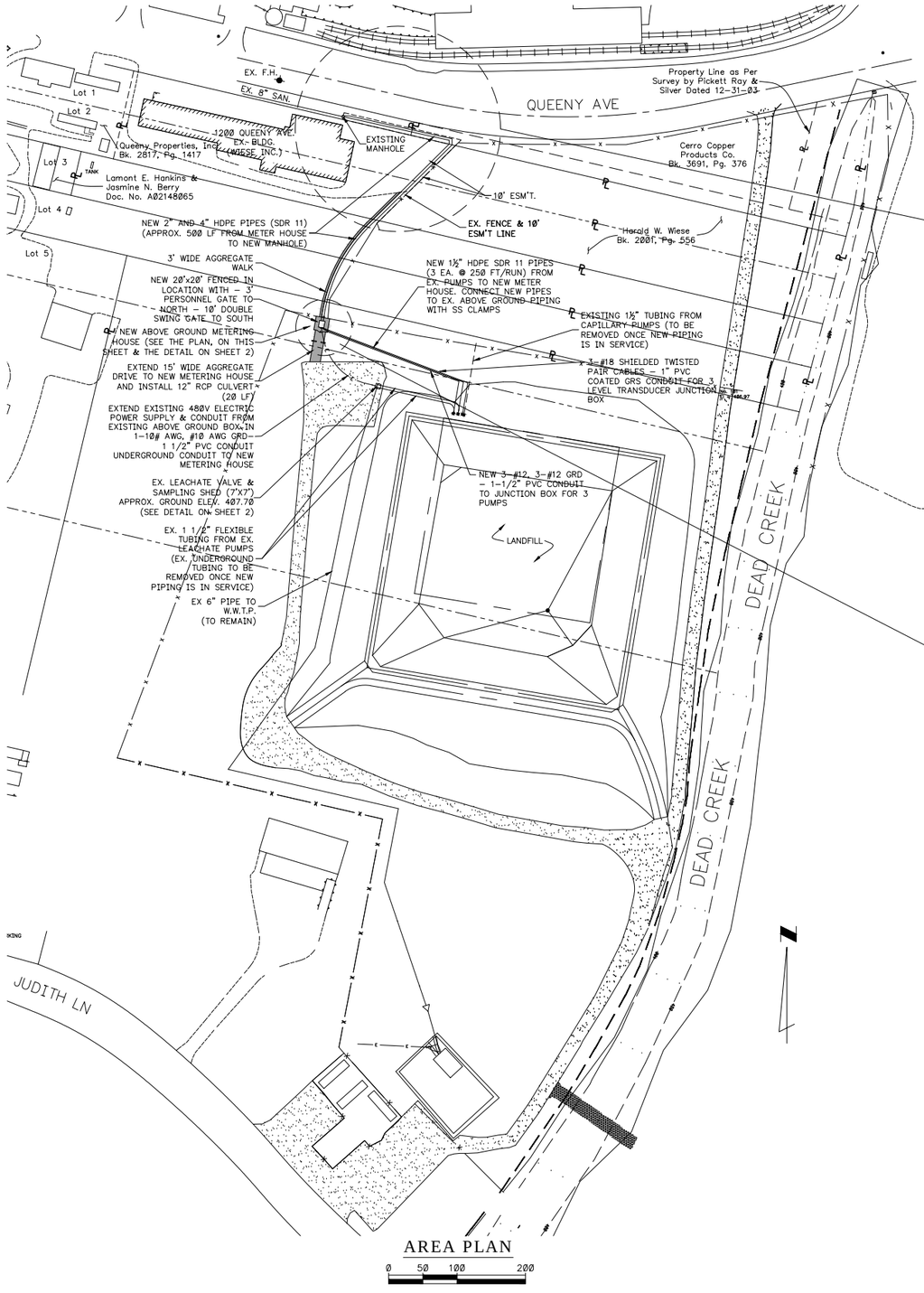
SCALE FEET

ILLINOIS

QUADRANGLE LOCATION

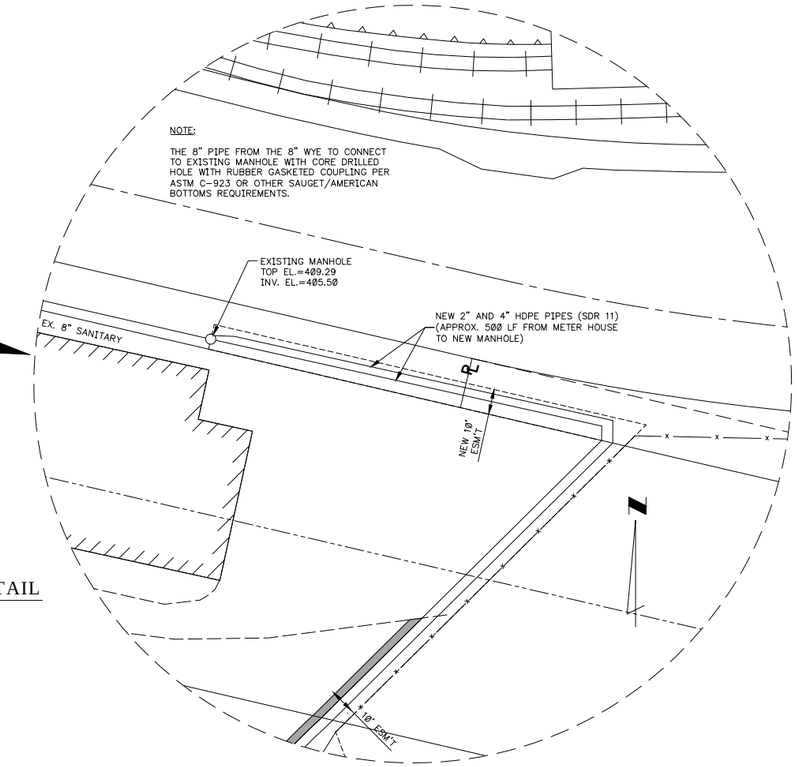
SAUGET AREA 1 JUDITH LANE CONTAINMENT CELL SEWER CONNECTION SAUGET, ILLINOIS		PROJECT NO. 60514419
AECOM		
DRN. BY: djd February 2012 DSGN. BY: jrm CHKD. BY: bbb	Site Location	FIG. NO. 1

File: P:\ENVIRONMENTAL\SOLUTIA -JUDITH LANE\DRAWINGS\FIGURES FOR JENN\FIG-1 SITE LOCATION.DWG Last edited: MAR. 22, 12 @ 4:20 p.m. by: curt_smith



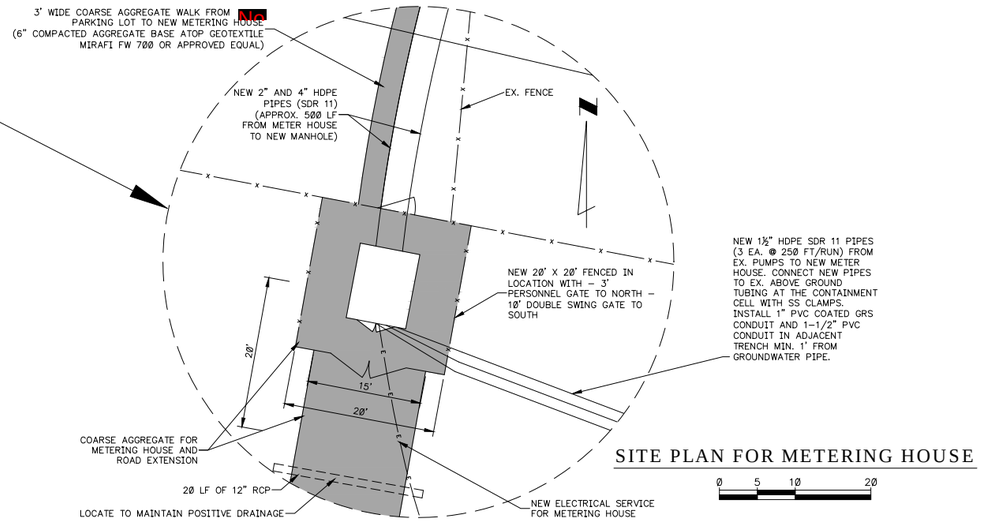
AREA PLAN

0 50 100 200



FORCE MAIN TIE-IN DETAIL

0 15 30 60



SITE PLAN FOR METERING HOUSE

0 5 10 20

NOTE:

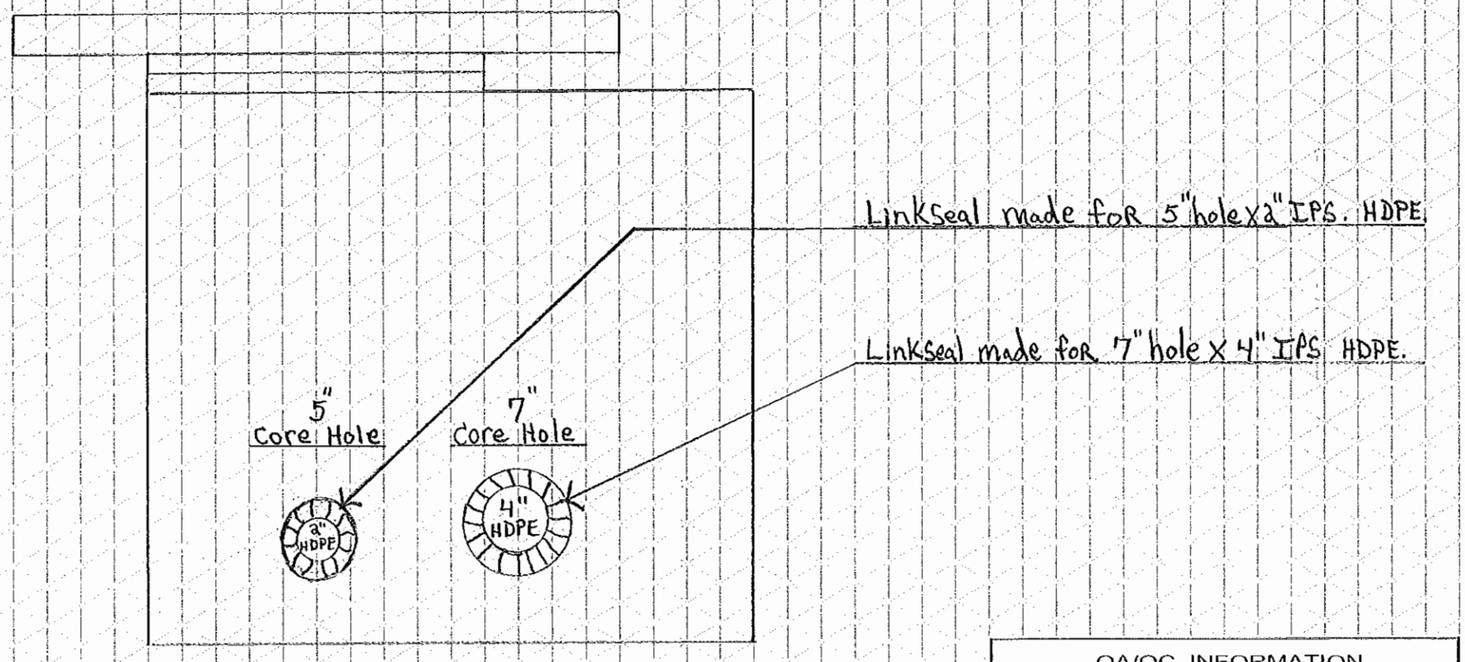
1. HDPE PIPES TO BE FUSION BUTT WELDED.
2. ALL EXISTING CONDITION INFORMATION IS BASED ON PREVIOUS PROJECTS AND CONTRACTOR RECORD DRAWINGS AND HAVE NOT BEEN FIELD VERIFIED.
3. CONTRACTOR TO COORDINATE WITH ENGINEER THE USE OF THE SECONDARY CONTAINMENT AREA & SUMP PUMP FOR ANY NECESSARY DECONTAMINATION.
4. PIPE AND FITTINGS SHALL BE HIGH DENSITY POLYETHYLENE PE3408 PER ASTM D3350 W/ PE 345464C CELL CLASSIFICATION PER ASTM D3350, DR 11 MINIMUM WALL THICKNESS FOR IPS PIPE, RATED FOR PRESSURE OF AT LEAST 160 PSI AT 73° F, MINIMUM HYDROSTATIC DESIGN BASIS (HDB) OF 1,600 PSI AT 73° F PER PPI TR-3, AND LISTED IN PPI TR-4. BUTT FUSION METHOD, ANSI B16.1 FLANGED CONNECTIONS, OR MECHANICAL JOINTS. ELECTROFUSION COUPLINGS AND SADDLES MAY BE USED MEETING THE SAME PRESSURE RATING AS THE PIPE.

Sauget Area 1 Judith Lane Containment Cell Sewer Connection Sauget, Illinois		PROJECT NO. 60514419
AECOM		
REV. NO. 1 Date: 7/20/15 DL, UPDATED NOTES TO INCLUDE APPROPRIATE ELECTRICAL EQUIPMENT	DRN. BY:E. Bolden DSGN. BY:G. Toribio CHKD. BY:D. Lowry	Site Plan	FIG. NO. 2

File: P:\PROJECTS\ENVIRONMENTAL\SOLUTIA JUDITH LANE\LEACHATE LINE ENGINEERING\CONSTROLS SYSTEM DESIGN DRAWINGS\FIGURES\FIGURE 1 JUDITHLNSEWERCONNECT.DWG Last edited: JUL. 28, 15 @ 12:44 p.m. by: david_depuire

As-Built Drawings

AS Built manhole connection



Not to Scale

FIELD MATERIALS

ITEM NO.	QUANTITY REQD	DESCRIPTION
		AS Built Manhole connection.

FABRICATION

FAB PIECE NO	FAB MARK	SPOOL NO

QA/QC INFORMATION

R/T % ___	☐	M/T % ___	☐
P/T % ___	☐	V/T % ___	☐
PMI REQUIRED	☐		
PWHT	☐		
HYDRO PSIG	_____		
QA/QC INT	_____		

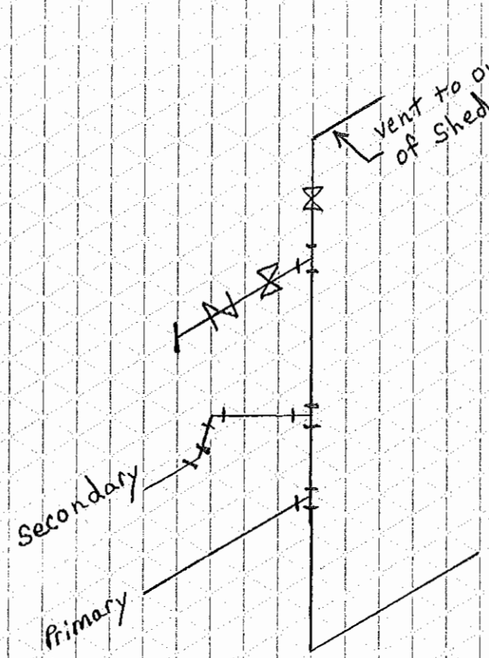
REVISIONS

NOTE	BY	DATE	DESCRIPTION
△			
△			
△			

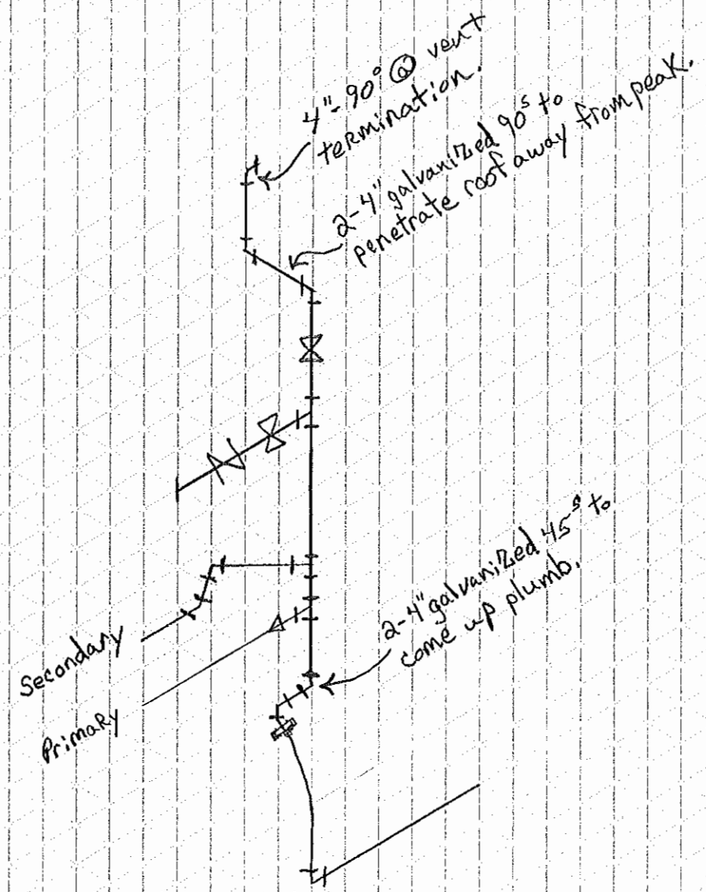
GRP Innovation from concept to completion
Mechanical Contractors
#1 Mechanical Drive PO Box 188 Bethalto, IL 62011
Phone (618) 258.9000 Fax (618) 258.9090
Email fab@grpmech.com

PROJECT NAME: Solutia Leachate Management			
DATE: 3-8-2017	DRAWN BY: Tim Grove	CHECKED BY:	
SYSTEM NO:	JOB NO: 6614 A	REV NO:	
SYSTEM NAME:	ISO NO:		

4" Plan Isometric



4" Riser AS Built



Not to scale

FIELD MATERIALS

ITEM NO.	QUANTITY REQD	DESCRIPTION
		4" Galvanized AS Built

FABRICATION

FAB PIECE NO	FAB MARK	SPOOL NO

QA/QC INFORMATION

R/T % ☐	M/T % ☐	PWHT ☐	
P/T % ☐	V/T % ☐	HYDRO PSIG	
PMI REQUIRED ☐		QA/QC INT	

REVISIONS

NOTE	BY	DATE	DESCRIPTION
△			
△			
△			

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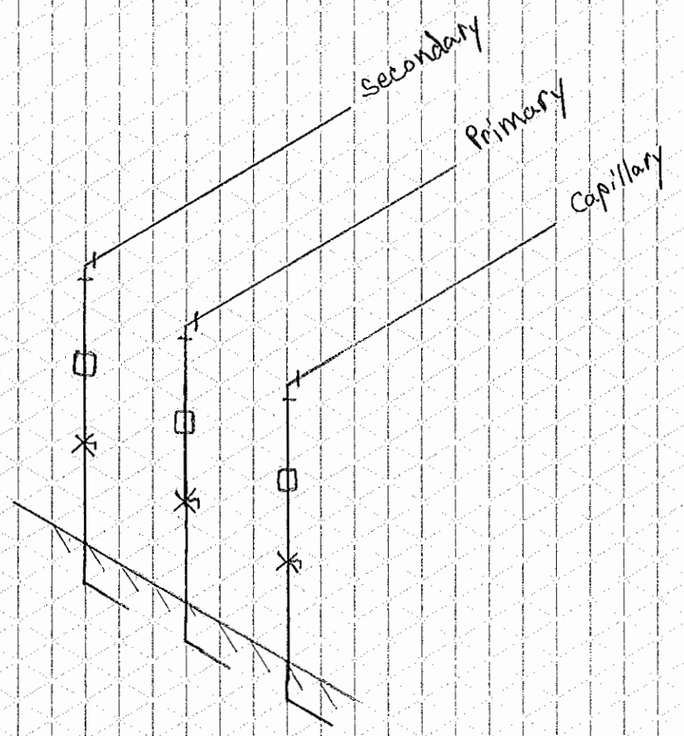
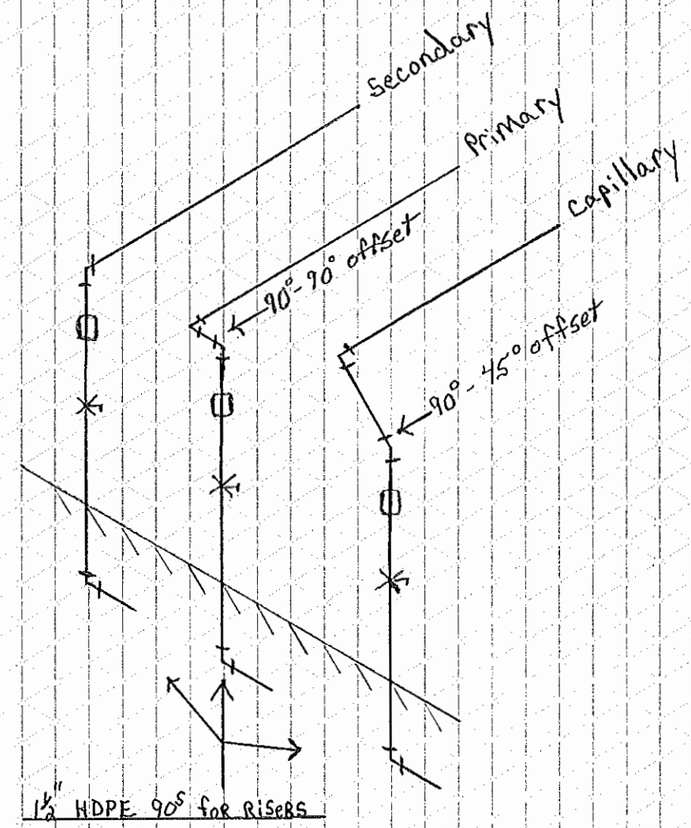
#1 Mechanical Drive PO Box 188 Bethalto, IL 62011
Phone (618) 258.9000 Fax (618) 258.9090
Email fab@grpmech.com

PROJECT NAME: Solutia Leachate Management
DATE: 3-8-2017
DRAWN BY: Tim Grove
CHECKED BY:
SYSTEM NO:
JOB NO: 6614 A
REV NO:
SYSTEM NAME:
ISO NO:

Plan Isometric



As Built



Not to Scale

FIELD MATERIALS

ITEM NO	QUANTITY REQD	DESCRIPTION
		In Shed piping showing offsets in Primary & Capillary lines.

FABRICATION

FAB PIECE NO	FAB MARK	SPOOL NO

QA/QC INFORMATION

R/T % ☐	M/T % ☐	PWHT ☐	
P/T % ☐	V/T % ☐	HYDRO PSIG	
PMI REQUIRED ☐		QA/QC INT	

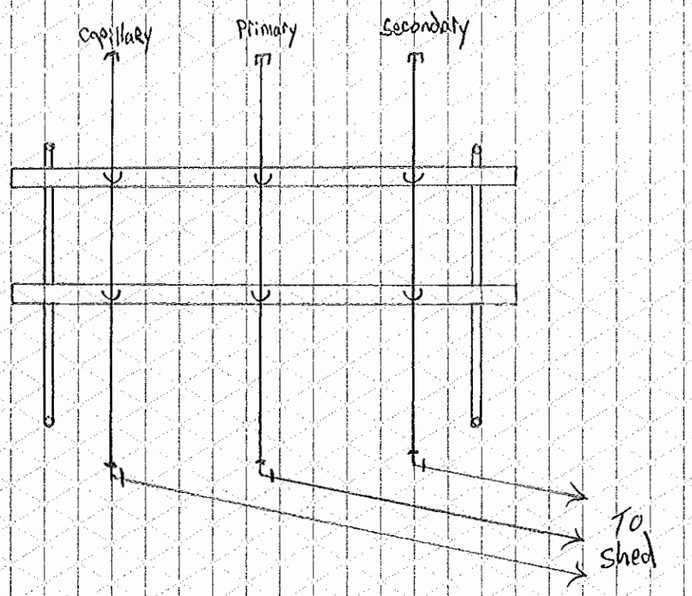
REVISIONS

NOTE	BY	DATE	DESCRIPTION
△			
△			
△			

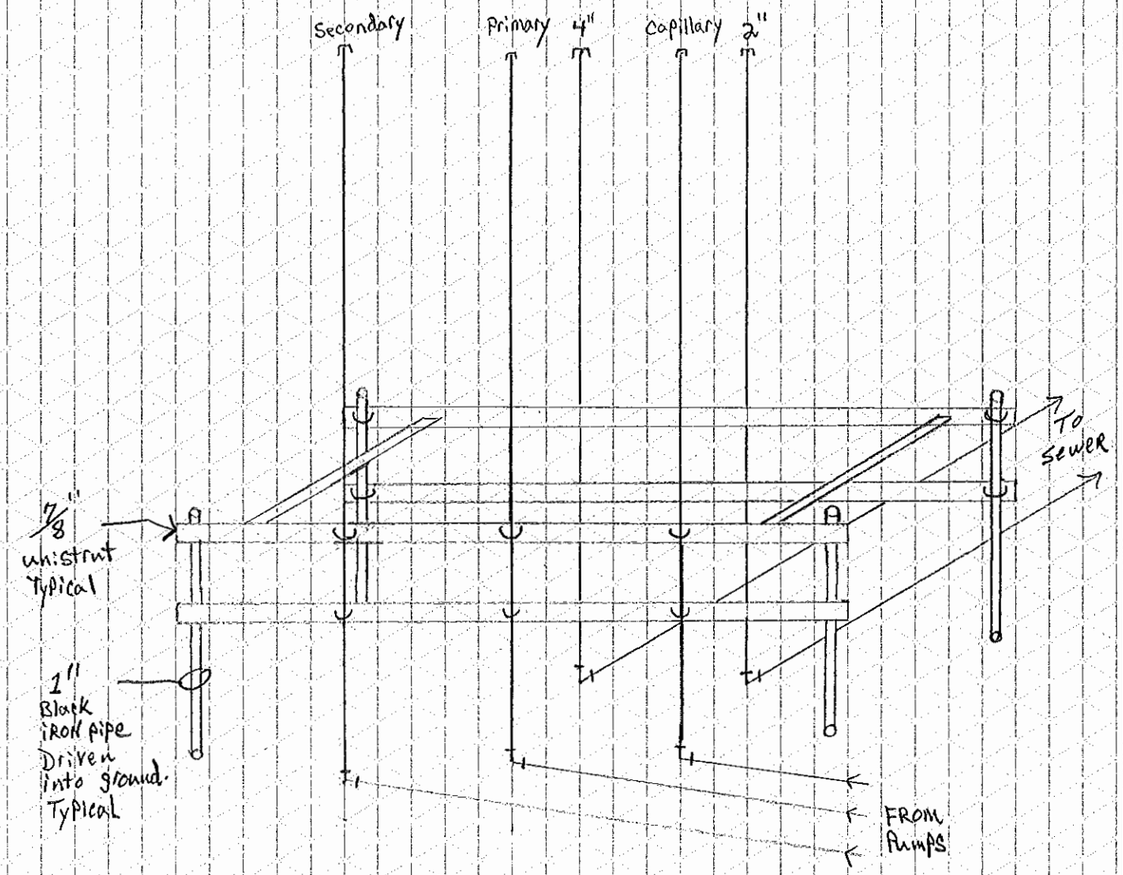
GRP Innovation from concept to completion
Mechanical Contractors
#1 Mechanical Drive PO Box 188 Bethalto, IL 62011
Phone (618) 258.9000 Fax (618) 258.9090
Email fab@grpmech.com

PROJECT NAME: Solutia leachate management			
DATE: 3-8-2017	DRAWN BY: Tim Grove		CHECKED BY:
SYSTEM NO:	JOB NO: 6614 A		REV NO:
SYSTEM NAME:		ISO NO:	

Ditch rack by PumPS



Ditch rack for shed risers



Not to Scale

FIELD MATERIALS

ITEM NO.	QUANTITY REQ'D	DESCRIPTION
		Racks in ditch to hold H.D.P.E. risers.

FABRICATION

FAB PIECE NO	FAB MARK	SPOOL NO

QA/QC INFORMATION

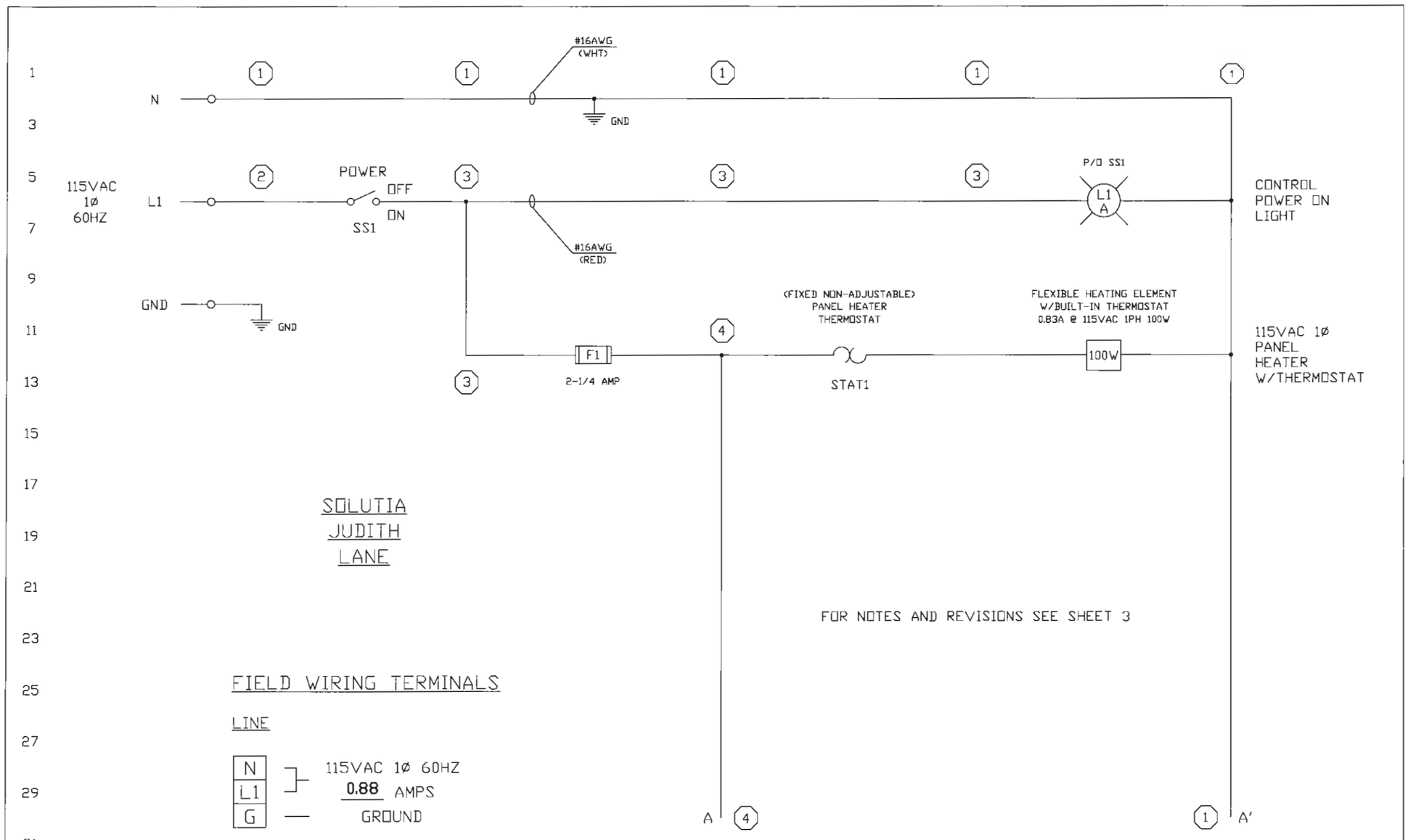
R/T % ___	☐	M/T % ___	☐
P/T % ___	☐	V/T % ___	☐
PMI REQUIRED	☐	PWHT	☐
		HYDRO PSIG ___	
		QA/QC INT ___	

REVISIONS

NOTE	BY	DATE	DESCRIPTION
△			
△			
△			

GRP Innovation from concept to completion
Mechanical Contractors
#1 Mechanical Drive PO Box 188 Bethalto, IL 62011
Phone (618) 258.9000 Fax (618) 258.9090
Email fab@grpmech.com

PROJECT NAME: Solutia Leachate Management			
DATE: 3-8-2017	DRAWN BY: Tim Grove	CHECKED BY:	
SYSTEM NO:	JOB NO: 6614A	REV NO:	
SYSTEM NAME:	ISO NO:		



SOLUTIA
JUDITH
LANE

FOR NOTES AND REVISIONS SEE SHEET 3

FIELD WIRING TERMINALS

LINE

N	115VAC 1Ø 60HZ
L1	0.88 AMPS
G	GROUND

FUSE	TYPE	RATING
F1	MDL	2-1/4
F2	MDL	1/4

AS BUILT

JOB No. 16-12771D

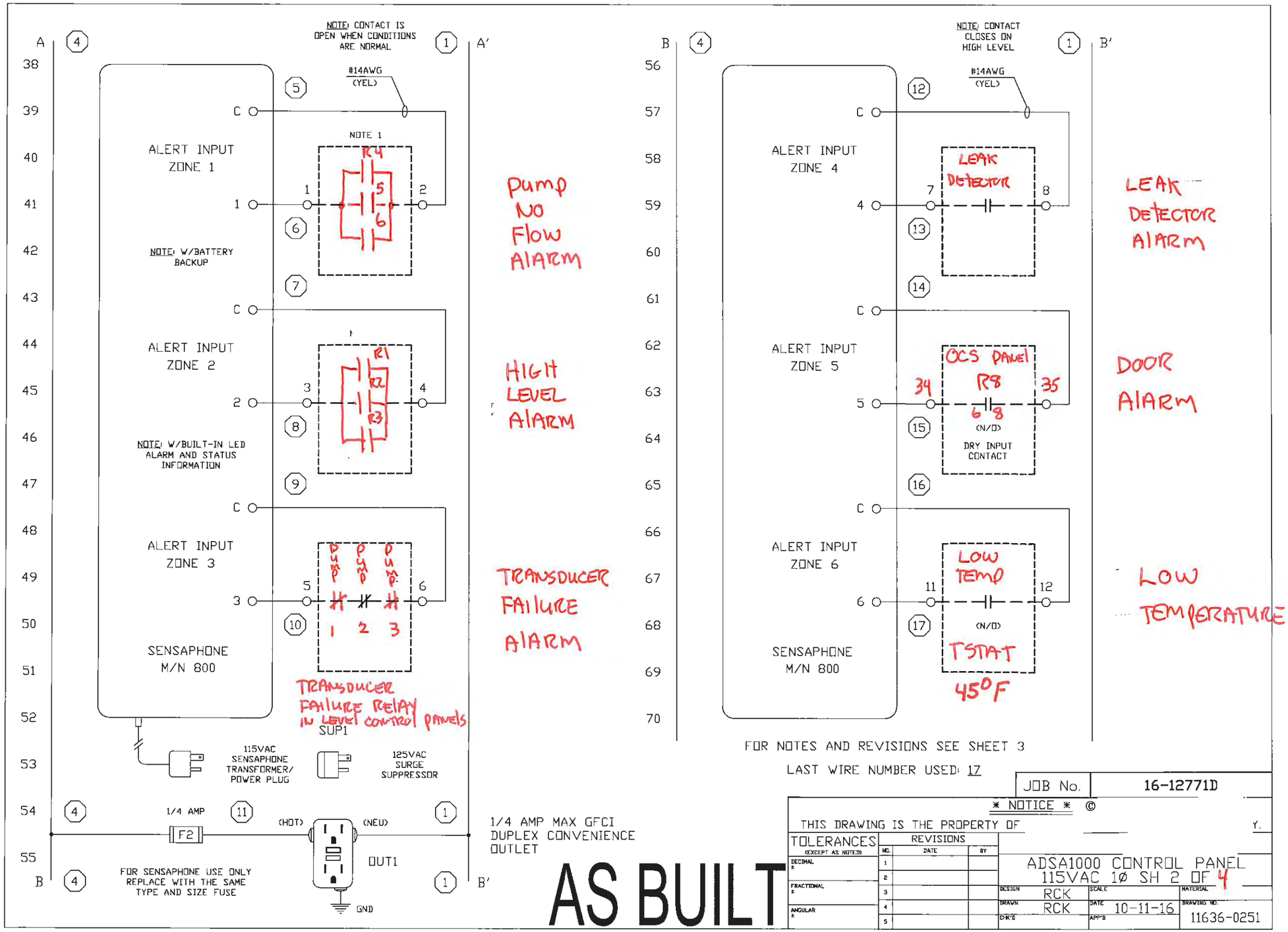
* NOTICE *

TOLERANCES (EXCEPT AS NOTED)
DECIMAL ±
FRACTIONAL ±
ANGULAR ±

REVISIONS		
NO.	DATE	BY
1		
2		
3		
4		
5		

ADSA1000 CONTROL PANEL
115VAC 1Ø SH 1 OF 4

DES IGN	RCK	SCALE	MATERIAL
DRAWN	RCK	DATE 10-11-16	DRAWING NO. 11636-0250
CHK'D		APP'D	



FOR NOTES AND REVISIONS SEE SHEET 3

LAST WIRE NUMBER USED: 17

AS BUILT

JOB No. 16-12771D

TOLERANCES (EXCEPT AS NOTED)
DECIMAL ±
FRACTIONAL ±
ANGULAR ±

REVISIONS		
NO.	DATE	BY
1		
2		
3		
4		
5		

ADSA1000 CONTROL PANEL
115VAC 1Ø SH 2 OF 4

DESIGN	RCK	SCALE	MATERIAL
DRAWN	RCK	DATE 10-11-16	DRAWING NO. 11636-0251
CHK'D		APP'D	

NOTE: CONTACT IS OPEN WHEN CONDITIONS ARE NORMAL

#14AWG (YEL)

C

ALERT INPUT ZONE 7

NOTE: W/BATTERY BACKUP

Aϕ Bϕ

POWER FAILURE ALARM

C

ALERT INPUT ZONE 8

SPARE

NOTE: W/BUILT-IN LED ALARM AND STATUS INFORMATION

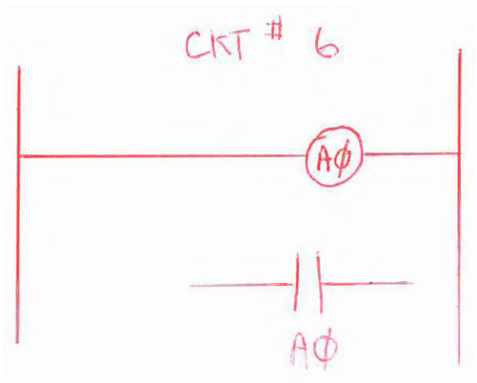
PROGRAMMABLE OUTPUT CONTACT

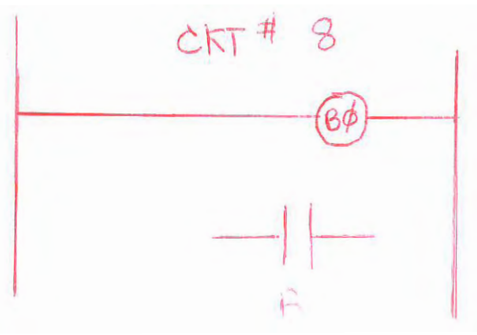
C — 45

NO — 46 — TO OCS PANEL LEAK DETECTOR INPUT

NC

SENSAI HONE M/N 800





AMP MAX GFCI
PLEX CONVENIENCE
LET

AS BUILT

JOB No.	16-12771D

* NOTICE *

THIS DRAWING IS THE PROPERTY OF

TOLERANCES (EXCEPT AS NOTED)	REVISIONS		
DECIMAL ±	NO.	DATE	BY
FRACTIONAL ±	1		
ANGULAR ±	2		
	3		
	4		
	5		

ADSA1000 CONTROL PANEL 115VAC 1Ø SH 3 OF 4

DESIGN	SCALE	MATERIAL
RCK		
DRAWN RCK	DATE 10-11-16	DRAWING NO. 11636-0251
CHK'D	APP'D	

FIELD WIRING TERMINALS

POWER FAILURE (DRY INPUT CONTACT)

L/N 41 — 1, 2 — (N/C) STANDALONE CONTROL PANEL (A) POWER FAILURE (DRY INPUT CONTACT)

NC Flow

POWER FAILURE (DRY INPUT CONTACT)

L/N 45 — 3, 4 — (N/C) STANDALONE CONTROL PANEL (B) POWER FAILURE (DRY INPUT CONTACT)

HIGH. HIGH Alarm

POWER FAILURE (DRY INPUT CONTACT)

L/N 49 — 5, 6 — (N/C) STANDALONE CONTROL PANEL (C) POWER FAILURE (DRY INPUT CONTACT)

TRANSDUCER FAILURE

NOTES:
1. NOT PART OF CONTROLLER

ALARM (DRY INPUT CONTACT)

L/N 59 — 7, 8 — (N/O) STANDALONE CONTROL PANEL (A) SUMP HIGH LEVEL ALARM (DRY INPUT CONTACT)

FLOODING ALARM

ALARM (DRY INPUT CONTACT)

L/N 63 — 9, 10 — (N/O) STANDALONE CONTROL PANEL (B) SUMP HIGH LEVEL ALARM (DRY INPUT CONTACT)

DOOR OPEN

AS BUILT

ALARM (DRY INPUT CONTACT)

L/N 67 — 11, 12 — (N/O) STANDALONE CONTROL PANEL (C) SUMP HIGH LEVEL ALARM (DRY INPUT CONTACT)

LOW TEMP

13, 14

POWER OUTAGE

JOB No. 16-12771D

* NOTICE *

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DECIMAL ±
FRACTIONAL ±
ANGULAR ±

REVISIONS

NO.	DATE	BY
1		
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3		
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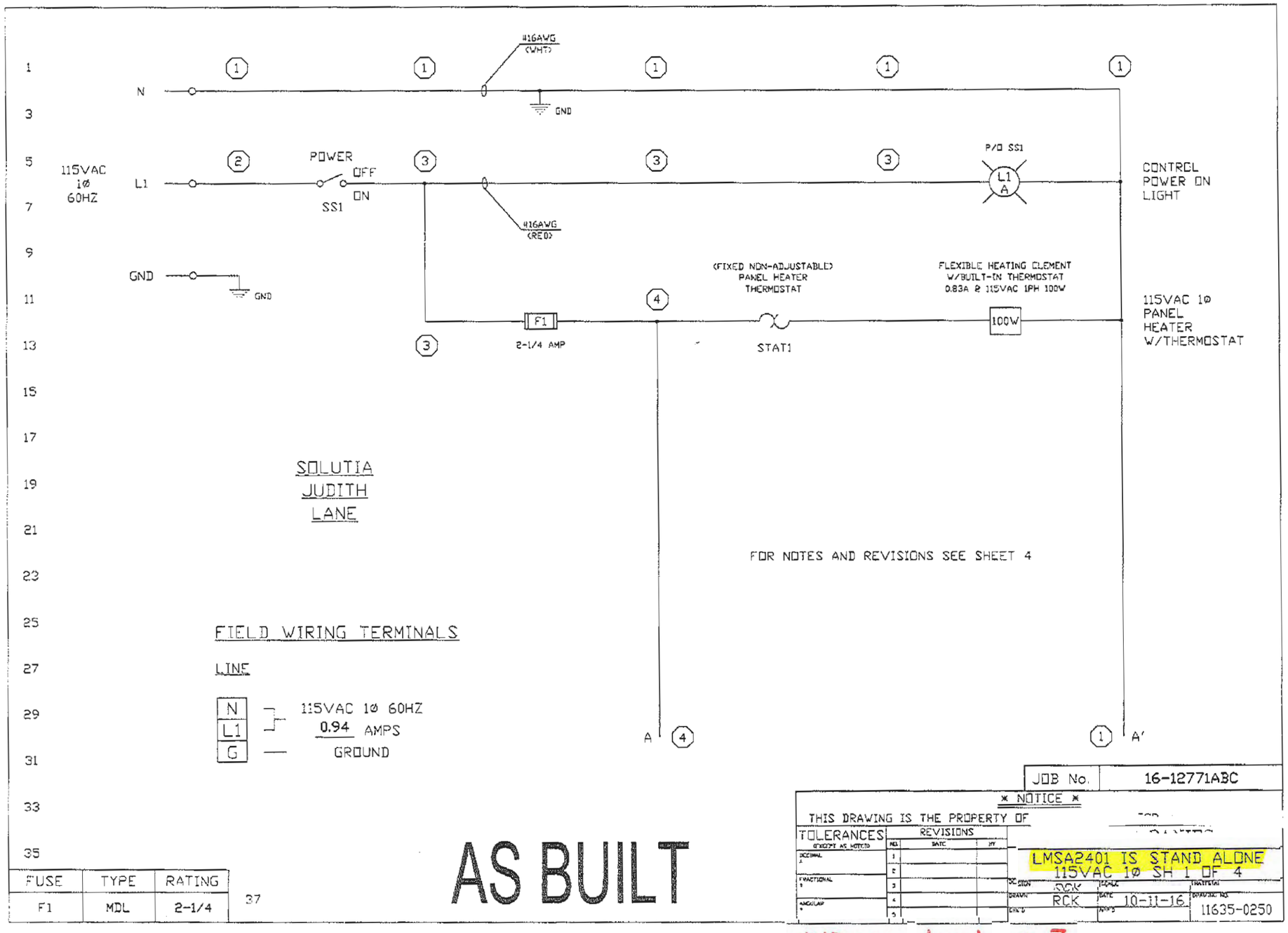
5		

ADSA1000 CONTROL PANEL
115VAC 1Ø SH 4 OF 4

DESIGN	RCK	SCALE	MATERIAL
DRAWN	RCK	DATE 10-11-16	DRAWING NO. 11636-0252
CHK'D		APP'D	


#16AWG
(WHT)
N
GND
115VAC
1Ø
60HZ
L1
POWER
OFF
ON
SS1
#16AWG
(RED)
P/O SS1
L1
A
CONTROL
POWER ON
LIGHT
GND
GND
(FIXED NON-ADJUSTABLE)
PANEL HEATER
THERMOSTAT
FLEXIBLE HEATING CLEMENT
W/BUILT-IN THERMOSTAT
0.83A @ 115VAC 1PH 100W
F1
2-1/4 AMP
STAT1
100W
115VAC 1Ø
PANEL
HEATER
W/THERMOSTAT
A
A'
SOLUTIA
JUDITH
LANE
FOR NOTES AND REVISIONS SEE SHEET 4
FIELD WIRING TERMINALS
LINE
N
L1
G
115VAC 1Ø 60HZ
0.94 AMPS
GROUND
FUSE
TYPE
RATING
F1
MDL
2-1/4
AS BUILT
JOB No.
16-12771ABC
* NOTICE *
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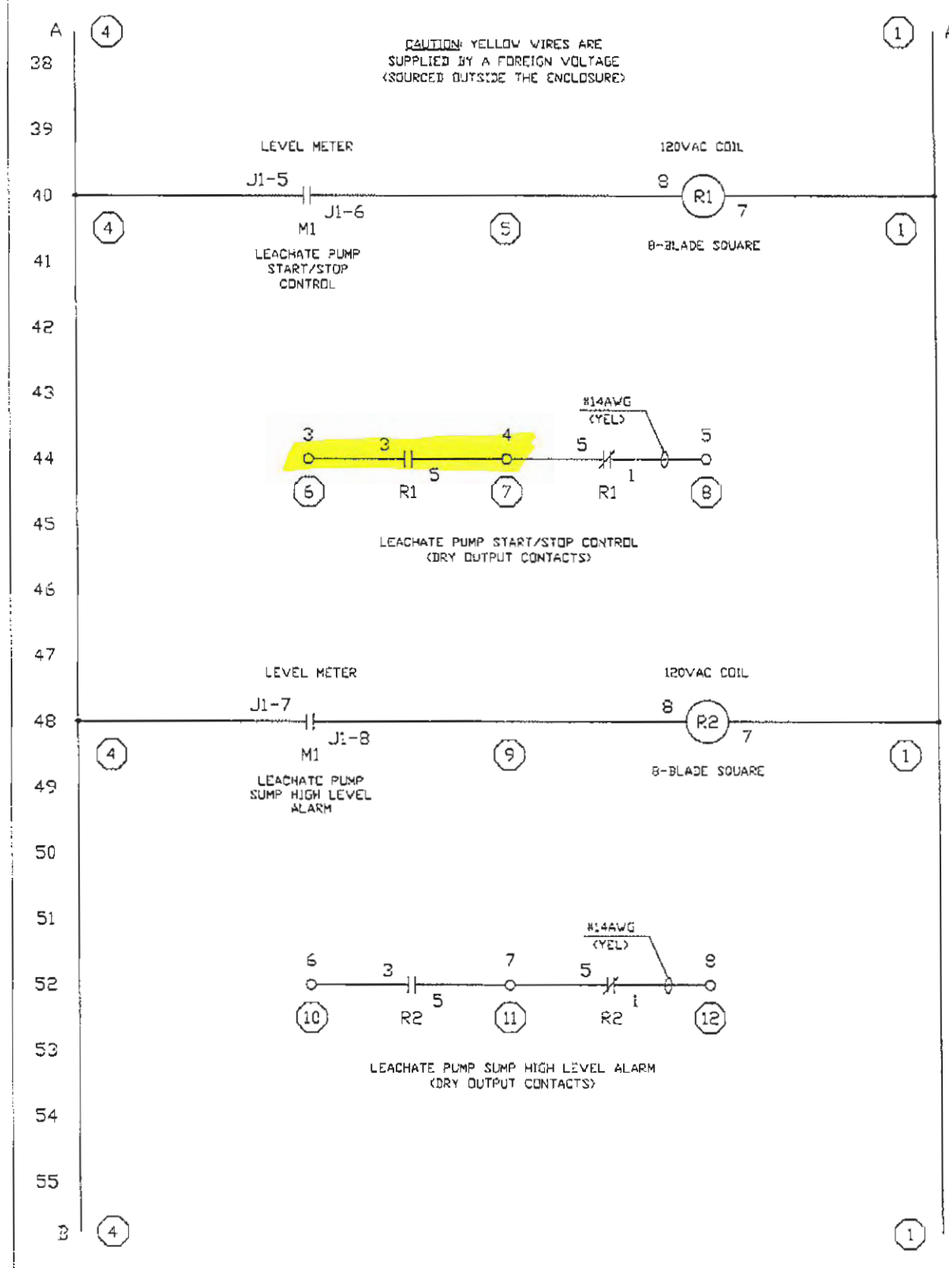
TOLERANCES
REVISIONS
LMSA2401 IS STAND ALONE
115VAC 1Ø SH 1 OF 4
DRAWN
RCK
DATE
10-11-16
DRAWING NO.
11635-0250
TYPICAL Level x 3



LEACHATE PUMP START/STOP CONTROL RELAY
44, 44

LEACHATE PUMP START/STOP CONTROL (DRY OUTPUT CONTACTS)

To motor starter

FOR NOTES AND REVISIONS SEE SHEET 4

LEACHATE PUMP SUMP HIGH LEVEL ALARM RELAY
52, 52

LEACHATE PUMP SUMP HIGH LEVEL ALARM (DRY OUTPUT CONTACTS)

AS BUILT

JOB No. 16-12771ABC

TOLERANCES (EXCEPT AS NOTED)
DECIMAL
FRACTIONAL
ANGULAR

REVISIONS

NO.	DATE	BY
1		
2		
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4		
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LMSA2401 IS STAND ALONE
115VAC 1Ø SH 2 OF 4

DESIGN	SCALE	MATERIAL
RCK		
DRAWN RCK	DATE 10-11-16	DRAWING NO. 11635-0251
CHK'D	APP'D	

B 4 1 B′

CAUTION: YELLOW WIRES ARE SUPPLIED BY A FOREIGN VOLTAGE (SOURCED OUTSIDE THE ENCLOSURE)

120VAC COIL

8 R3 7

8-BLADE SQUARE

4 4 1

POWER FAILURE RELAY 63, 63

#14AWG (YEL)

9 3 10 5 11

5 1

13 R3 14 R3 15

POWER FAILURE (DRY OUTPUT CONTACTS)

POWER FAILURE (DRY OUTPUT CONTACTS)

TO LMSA 12 8 TO level sensor IS Barrier

C NO

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16

L1 120VAC N

APD1090

LEVEL SENSOR FAILURE ALARM RELAY

ABSOLUTE PROCESS INSTRUMENTS, INC.

C 4 1 C′

NOTE: W/INTERNAL FUSE PROTECTION

ALL WIRING TO METER TO BE #22 AWG

CH1000-120VAC PANEL MOUNTED LEVEL CONTROL METER (SET FOR SDHH)

J2 8 7 M1

115VAC (4-20mA) INPUT 115VAC COMMON

J1 1 3 12 13 2

L G S(+) S(-) N

RED WHT

CABLE SHIELD

LEACHATE PUMP LEVEL CONTROLLER 40, 48

TO APD1090 10

11

16 17

2-CONDUCTOR TWISTED PAIR CABLE W/SHIELD

BLK

GRY

8 5

IS1

12 13 4-20mA OUTPUT

GND

IS BARRIER GROUND

BLU

NON-INTRINSICALLY SAFE AREA

1 4

INTRINSICALLY SAFE AREA

INTRINSICALLY SAFE 2 CHANNEL +DC ZENER BARRIER

BLU BLU

18 19 (NOTES 2, 3 & 4)

LEVEL SENSOR GROUND GND 1 (+) 2 (-)

LEACHATE PUMP LEVEL SENSOR (4 - 20mA) INPUT (NOTE 5)

OUTLINED IN BLUE

AS BUILT

JOB No. 16-12771ABC

TOLERANCES (EXCEPT AS NOTED) DECIMAL FRACTIONAL ANGULAR

REVISIONS

NO.	DATE	BY
1		
2		
3		
4		
5		

LMSA2401 IS STAND ALONE 115VAC 1Ø SH 3 OF 4

DESIGN	RCK	SCALE	MATERIAL
DRAWN	RCK	DATE 10-11-16	DRAWING NO. 11635-0252
CHK'D		APP'D	

FIELD WIRING TERMINALS

LEACHATE PUMP LEVEL SENSOR (INTRINSICALLY SAFE TERMINALS)

1	—	(+) RED	LEACHATE PUMP LEVEL SENSOR (4 - 20mA) INPUT (NOTES 2, 3, 4 & 5)
2	—	(-) BLACK	
GND	—	SHIELD GROUND	

LEACHATE PUMP CONTROL (DRY OUTPUT CONTACTS)

To motor starter

3	LEACHATE PUMP START/STOP CONTROL W/1-N/O & 1-N/C (DRY OUTPUT CONTACTS)
4	
5	

SUMP HIGH LEVEL ALARM (DRY OUTPUT CONTACTS)

6	LEACHATE PUMP SUMP HIGH LEVEL ALARM W/1-N/O & 1-N/C (DRY OUTPUT CONTACTS)
7	
8	

POWER FAILURE (DRY OUTPUT CONTACTS)

9	POWER FAILURE W/1-N/O & 1-N/C (DRY OUTPUT CONTACTS)
10	
11	

4-20MA OUTPUT

TO OCS MONITORING PANEL

12	4-20MA OUTPUT
13	

NOTES:

1. NOT PART OF CONTROLLER
2. REFERENCE INSTALLATION OF INTRINSICALLY SAFE INSTRUMENT SYSTEMS IN CLASS I HAZARDOUS LOCATIONS, ANSI/ISA-RP 12.6-1987, SECTION 4.5.4
3. WARNING: SUBSTITUTION OF COMPONENTS MAY IMPAIR INTRINSIC SAFETY
4. INSTALL IN ACCORDANCE WITH ARTICLE 504 OF THE NATIONAL ELECTRIC CODE
5. MAXIMUM CABLE LENGTH TO THE LEVEL SENSOR, (M1) IS 3000 FEET

AS BUILT

JOB No.	16-12771ABC

TOLERANCES (EXCEPT AS NOTED)	REVISIONS NO.	DATE	BY
DECIMAL ±	1		
FRACTIONAL ±	2		
ANGULAR ±	3		
	4		
	5		

LMSA2401 IS STAND ALONE
115VAC 1Ø SH 4 OF 4

DESIGN	RCK	SCALE	MATERIAL
DRAWN	RCK	DATE 10-11-16	DRAWING NO. 11635-0253
CHK'D		APP'D	

CAUTION: DISCONNECT POWER BEFORE SERVICING THIS PANEL

NOTE: THE MAIN OVERCURRENT PROTECTION TO BE PROVIDED BY OTHERS

MAIN DISCONNECT

60 AMPS

MP2 CKT #4

115VAC 1Ø

L1

N

GND

GND

GND

#12AWG (RED)

PDB1

PD BLOCK

#12AWG (WHT)

115VAC 1PH 2 POLE 3 WIRE

WHT

BLK

SURGE PROTECTOR SUP1

GRN

GND

F1

4 AMP

#16AWG (RED)

A

115VAC CONTROL

A'

#16AWG (WHT)

FIELD WIRING TERMINALS

LINE

L1
N
115VAC 1Ø 60Hz
2.51 AMPS

GND — GROUND

SOLUTIA
JUDITH LANE

#14AWG (RED)

115VAC CONTROL

F2

2-1/2 AMP

(ADJUSTABLE) PANEL HEATER THERMOSTAT

STAT1

MOUNTED BEHIND THE CONTROLS ENCLOSURE BACK PANEL

100W

115VAC 1Ø PANEL HEATER

#14AWG (WHT)

FOR NOTES AND REVISIONS SEE SHEET 12

FUSE	TYPE	RATING VOLTS	RATING AMPS
F1	FRN-R	250	4
F2	FRN-R	250	2-1/2

AS BUILT

JOB No. 16-12852A

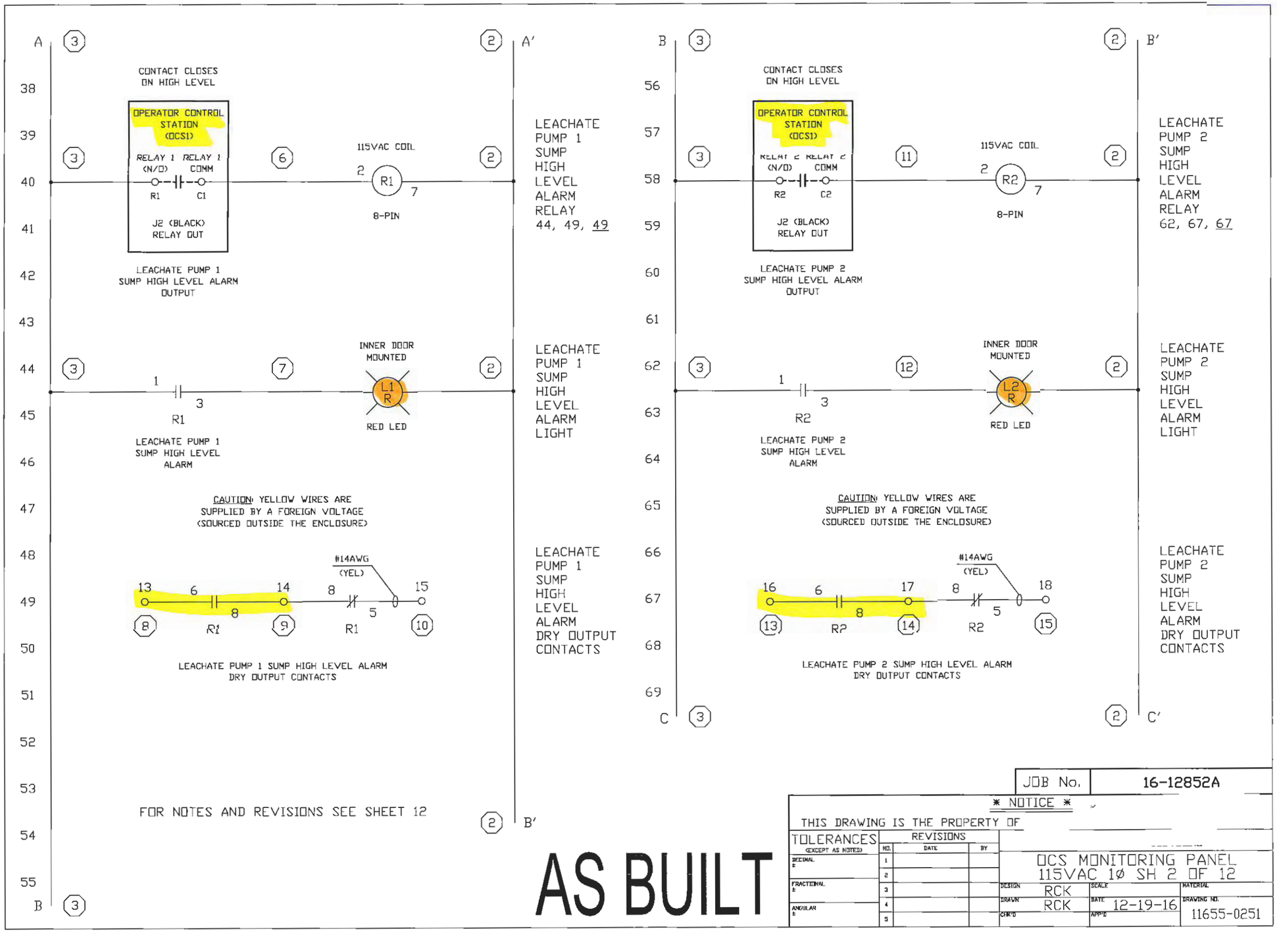
TOLERANCES (EXCEPT AS NOTED)
DECIMAL ±
FRACTIONAL ±
ANGULAR ±

REVISIONS

NO.	DATE	BY
1		
2		
3		
4		
5		

OCS MONITORING PANEL
115VAC 1Ø SH 1 OF 12

DESIGN RCK
DRAWN RCK
DATE 12-19-16
CHK'D
APP'D
DRAWING NO. 11655-0250


A
3
CONTACT CLOSES ON HIGH LEVEL
OPERATOR CONTROL STATION (OCS1)
RELAY 1 (N/O)
RELAY 1 COMM
R1
C1
J2 (BLACK) RELAY OUT
LEACHATE PUMP 1 SUMP HIGH LEVEL ALARM OUTPUT
6
115VAC COIL
2
R1
7
8-PIN
2
A'
LEACHATE PUMP 1 SUMP HIGH LEVEL ALARM RELAY 44, 49, 49
7
INNER DOOR MOUNTED
L1
R
RED LED
LEACHATE PUMP 1 SUMP HIGH LEVEL ALARM LIGHT
1
3
R1
LEACHATE PUMP 1 SUMP HIGH LEVEL ALARM
CAUTION: YELLOW WIRES ARE SUPPLIED BY A FOREIGN VOLTAGE (SOURCED OUTSIDE THE ENCLOSURE)
#14AWG (YEL)
13
6
14
8
15
8
5
8
R1
9
R1
10
LEACHATE PUMP 1 SUMP HIGH LEVEL ALARM DRY OUTPUT CONTACTS
LEACHATE PUMP 1 SUMP HIGH LEVEL ALARM DRY OUTPUT CONTACTS
FOR NOTES AND REVISIONS SEE SHEET 12
B
3
2
B'
B
3
CONTACT CLOSES ON HIGH LEVEL
OPERATOR CONTROL STATION (OCS1)
RELAY 2 (N/O)
RELAY 2 COMM
R2
C2
J2 (BLACK) RELAY OUT
LEACHATE PUMP 2 SUMP HIGH LEVEL ALARM OUTPUT
11
115VAC COIL
2
R2
7
8-PIN
2
B'
LEACHATE PUMP 2 SUMP HIGH LEVEL ALARM RELAY 62, 67, 67
12
INNER DOOR MOUNTED
L2
R
RED LED
LEACHATE PUMP 2 SUMP HIGH LEVEL ALARM LIGHT
1
3
R2
LEACHATE PUMP 2 SUMP HIGH LEVEL ALARM
CAUTION: YELLOW WIRES ARE SUPPLIED BY A FOREIGN VOLTAGE (SOURCED OUTSIDE THE ENCLOSURE)
#14AWG (YEL)
16
6
17
8
18
8
5
13
R2
14
R2
15
LEACHATE PUMP 2 SUMP HIGH LEVEL ALARM DRY OUTPUT CONTACTS
LEACHATE PUMP 2 SUMP HIGH LEVEL ALARM DRY OUTPUT CONTACTS
LEACHATE PUMP 1 SUMP HIGH LEVEL ALARM DRY OUTPUT CONTACTS
C
3
2
C'
AS BUILT
JOB No. 16-12852A
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REVISIONS
NO. DATE BY
1
2
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OCS MONITORING PANEL 115VAC 1Ø SH 2 OF 12
DESIGN RCK
DRAWN RCK
CHK'D
APP'D
SCALE
DATE 12-19-16
MATERIAL
DRAWING NO. 11655-0251

C (3) — C′ (2)

70 CONTACT CLOSES ON HIGH LEVEL

71 OPERATOR CONTROL STATION (OCS1)

72 (3) RELAY 3 (N/O) — RELAY 3 COMM — (16) — 115VAC COIL 2 R3 7 — (2)

73 R3 C3 — J2 (BLACK) RELAY OUT — 8-PIN

74 LEACHATE PUMP 3 SUMP HIGH LEVEL ALARM OUTPUT

75

76 (3) 1 — 3 — (17) — INNER DOOR MOUNTED L3 R — (2)

77 R3 — RED LED

LEACHATE PUMP 3 SUMP HIGH LEVEL ALARM

78

79 CAUTION: YELLOW WIRES ARE SUPPLIED BY A FOREIGN VOLTAGE (SOURCED OUTSIDE THE ENCLOSURE)

80

#14AWG (YEL)

81 19 — 6 — 20 — 8 — 21 — 5

82 (18) R3 (19) R3 (20)

LEACHATE PUMP 3 SUMP HIGH LEVEL ALARM DRY OUTPUT CONTACTS

83

84

85

86

87

D (3)

FOR NOTES AND REVISIONS SEE SHEET 12

LEACHATE PUMP 3 SUMP HIGH LEVEL ALARM RELAY 76, 81, 81

LEACHATE PUMP 3 SUMP HIGH LEVEL ALARM LIGHT

LEACHATE PUMP 3 SUMP HIGH LEVEL ALARM DRY OUTPUT CONTACTS

(2) D′

D (3) — D′ (2)

88 CONTACT CLOSES ON PUMP FAIL

89 OPERATOR CONTROL STATION (OCS1)

90 (3) RELAY 4 (N/O) — RELAY 4 COMM — (21) — 115VAC COIL 2 R4 7 — (2)

91 R4 C4 — J2 (BLACK) RELAY OUT — 8-PIN

92 LEACHATE PUMP 1 FAILURE (NO FLOW) ALARM OUTPUT

93

94 (3) 1 — 3 — (22) — INNER DOOR MOUNTED L4 R — (2)

95 R4 — RED LED

LEACHATE PUMP 1 FAILURE (NO FLOW) ALARM — R9 — R9 — 166

96

97 CAUTION: YELLOW WIRES ARE SUPPLIED BY A FOREIGN VOLTAGE (SOURCED OUTSIDE THE ENCLOSURE)

98

#14AWG (YEL)

99 22 — 6 — 23 — 8 — 24 — 5

100 (23) R4 (24) R4 (25)

LEACHATE PUMP 1 FAILURE (NO FLOW) ALARM DRY OUTPUT CONTACTS

101

E (3) — E′ (2)

LEACHATE PUMP 1 FAILURE (NO FLOW) ALARM RELAY 94, 99, 99

LEACHATE PUMP 1 FAILURE (NO FLOW) ALARM LIGHT

LEACHATE PUMP 1 FAILURE (NO FLOW) ALARM DRY OUTPUT CONTACTS

AS BUILT

JOB No. 16-12852A

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FRACTIONAL ±
ANGULAR ±

REVISIONS

NO.	DATE	BY
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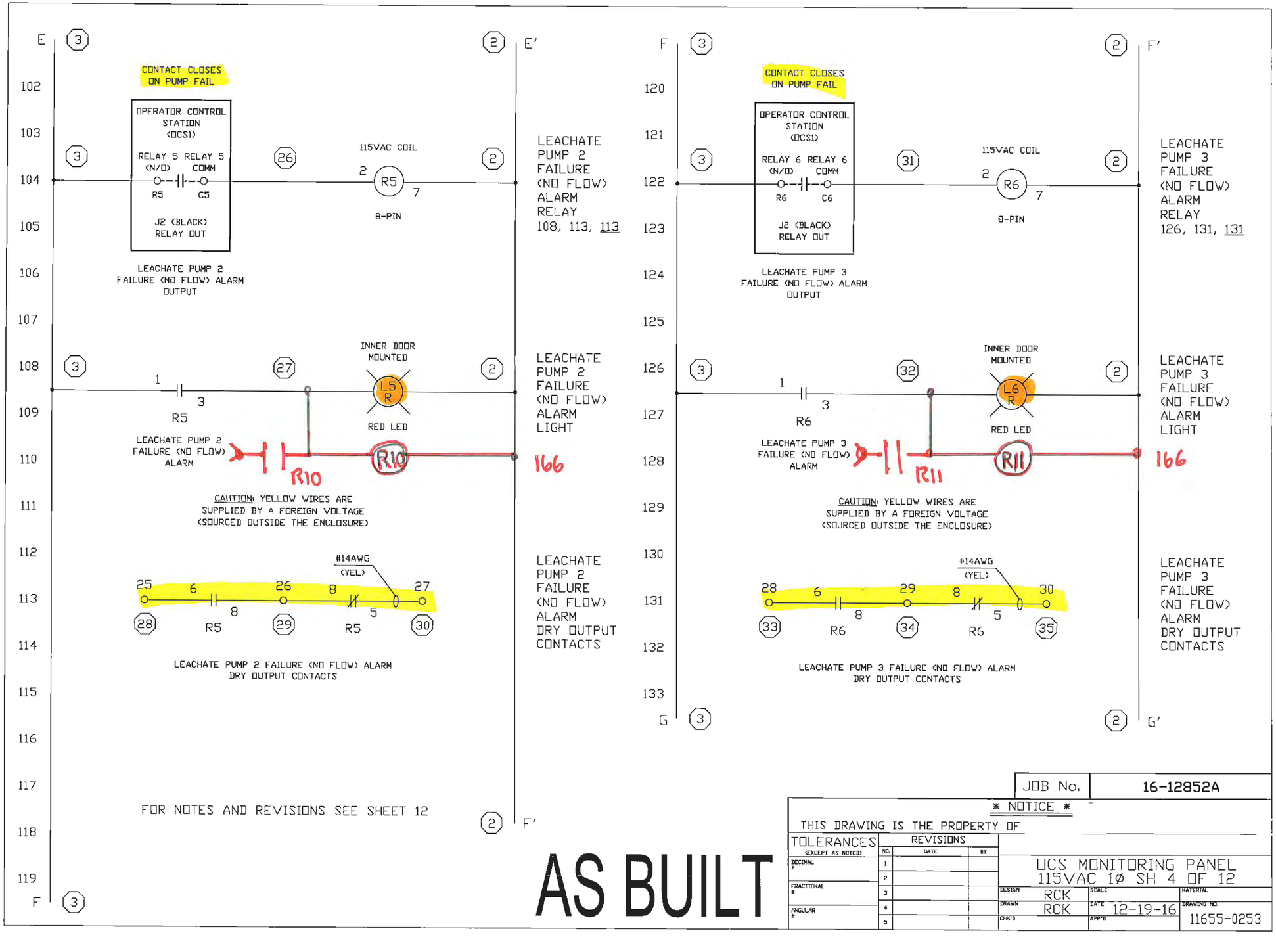
OCS MONITORING PANEL
115VAC 1Ø SH 3 OF 12

DESIGN	RCK	SCALE	MATERIAL
DRAWN	RCK	DATE 12-19-16	DRAWING NO. 11655-0252
CHK'D		APP'D	



FOR NOTES AND REVISIONS SEE SHEET 12

AS BUILT

JOB No. 16-12852A

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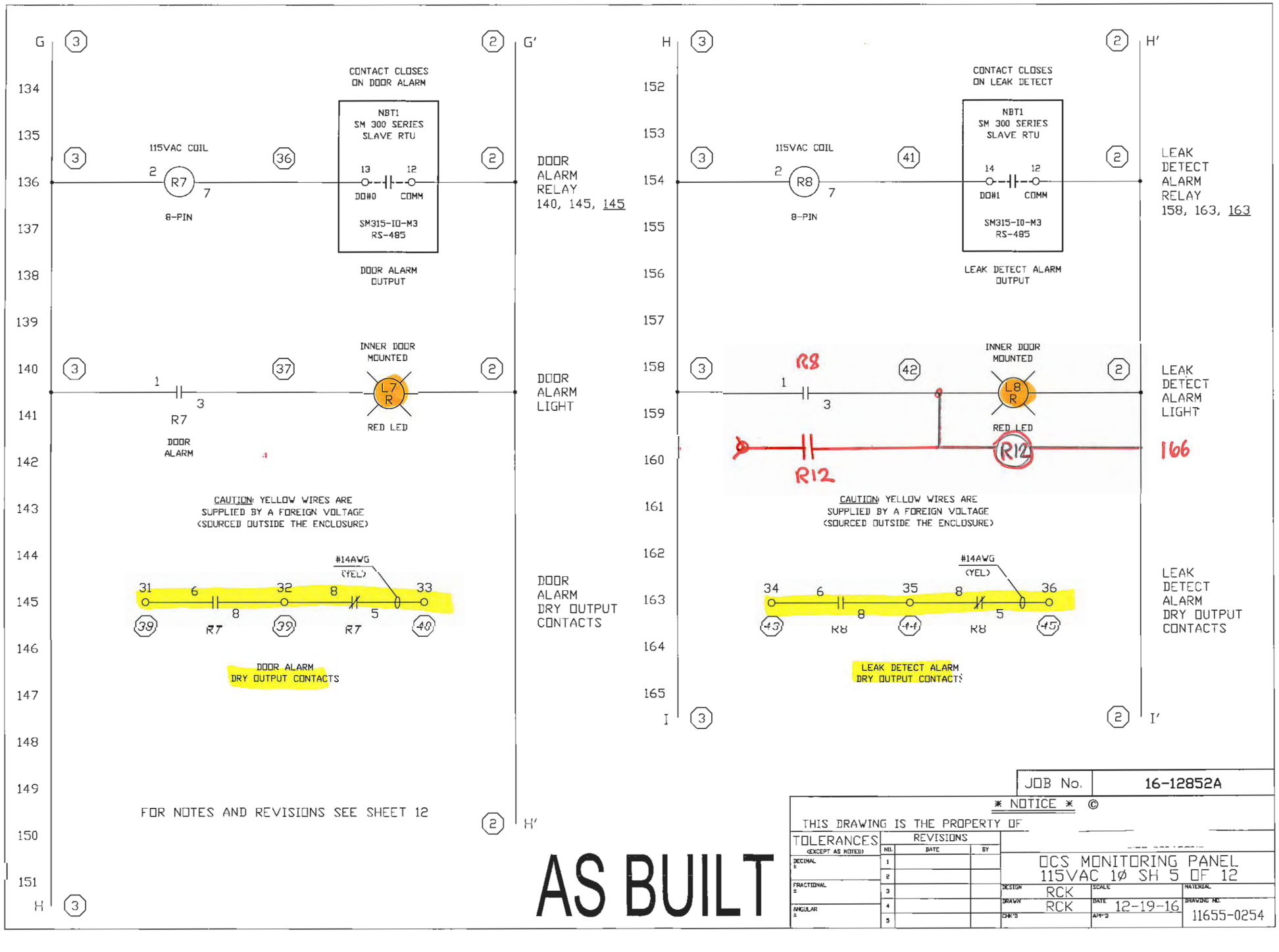
OCS MONITORING PANEL
115VAC 1Ø SH 4 OF 12

DESIGN	SCALE	MATERIAL
RCK		
DRAWN RCK	DATE 12-19-16	DRAWING NO. 11655-0253
CHK'D	APP'D	



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DCS MONITORING PANEL
115VAC 1Ø SH 5 OF 12

DESIGN	RCK	SCALE	MATERIAL
DRAWN	RCK	DATE 12-19-16	DRAWING NO. 11655-0254
CHK'D		APP'D	

115VAC

I

3

Pump RESET

115VAC COMM

2

I'

96, 110
128, 160

(+)24VDC

J

46

(-)24VDC

47

J'

166 167 168 169 170 171 172 173 174 175 176 177 178 179 180 181 182 183

(RED)

(WHT)

(PUR)

(GRY)

NOTE: W/BUILT-IN SHORT CIRCUIT/
OVER LOAD/OVER VOLTAGE AND
OVER TEMPERATURE PROTECTION

3

2

AC/L 1

115VAC

AC/N 2

POWER
SUPPLY
PWS1

#16AWG (PUR)

#16AWG (GRY)

5 (+)V

24VDC

4 (-)V

46

47

2.2A @ 24VDC

GND

GND

3 FG

SINGLE OUTPUT
SWITCHING POWER SUPPLY

24VDC
POWER
SUPPLY

FOR NOTES AND REVISIONS SEE SHEET 12

J 46 (+)24VDC

47 J' (-)24VDC

NOTE: W/USB (DATA LOGGING) RECEPTACLE MOUNTED ON THE INNER DOOR
W/INTERCONNECTING CABLE & (BLANK) 2GB USB FLASH DRIVE

NOTE: INPUTS I11(H3) & I12(H4) ARE NOT USED

OPERATOR CONTROL STATION (OCS1)					
P/N OCS-004-102 (I/O MAP)					
I/O	DESC	L/N	I/O	DESC	L/N
I1	LEACHATE PUMP 1 RUN DRY INPUT CONTACT	200	A1	LEACHATE PUMP 1 (4-20mA) LEVEL INPUT	231
I2	LEACHATE PUMP 2 RUN DRY INPUT CONTACT	205	A2	LEACHATE PUMP 2 (4-20mA) LEVEL INPUT	240
I3	LEACHATE PUMP 3 RUN DRY INPUT CONTACT	210	A3	LEACHATE PUMP 3 (4-20mA) LEVEL INPUT	249
I4	DOOR ALARM DRY INPUT CONTACT	218	A4	(SPARE)	
I5	LEAK DETECT ALARM DRY INPUT CONTACT	223	R1	LEACHATE PUMP 1 SUMP HI LVL ALARM OUTPUT	40
I6	(SPARE)		R2	LEACHATE PUMP 2 SUMP HI LVL ALARM OUTPUT	58
I7	(SPARE)		R3	LEACHATE PUMP 3 SUMP HI LVL ALARM OUTPUT	72
I8	(SPARE)		R4	LEACHATE PUMP 1 FAIL (NO FLOW) ALARM OUTPUT	90
I9(H1)	(SPARE)		R5	LEACHATE PUMP 2 FAIL (NO FLOW) ALARM OUTPUT	104
I10(H2)	(SPARE)		R6	LEACHATE PUMP 3 FAIL (NO FLOW) ALARM OUTPUT	122

I - DIGITAL INPUT, H - HIGH SPEED COUNTER, A - ANALOG INPUT,
R - RELAY OUTPUT, L/O - LOAD OUT

OPERATOR
CONTROL
STATION
(OCS1)
(I/O MAP)

K 46

47 K'

AS BUILT

JOB No. 16-12852A

TOLERANCES (EXCEPT AS NOTED)
DECIMAL ±
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ANGULAR ±

REVISIONS		
NO.	DATE	BY
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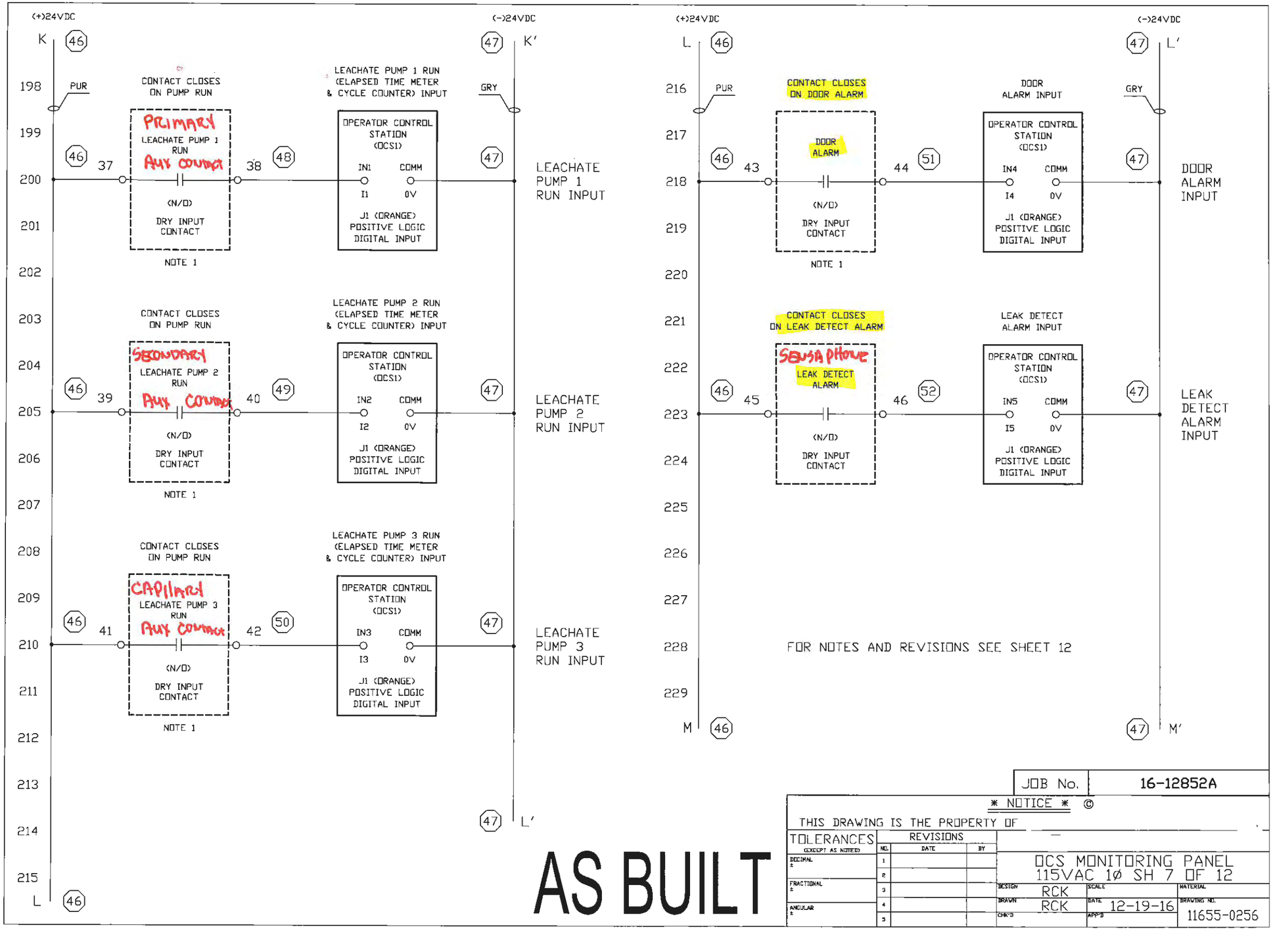
OCS MONITORING PANEL
115VAC 1Ø SH 6 OF 12

DESIGN	RCK	SCALE	MATERIAL
DRAWN	RCK	DATE 12-19-16	DRAWING NO. 11655-0255
CHK'D		APP'D	



AS BUILT

JOB No. 16-12852A

TOLERANCES (EXCEPT AS NOTED)
DECIMAL ±
FRACTIONAL ±
ANGULAR ±

REVISIONS			
NO.	DATE	BY	—
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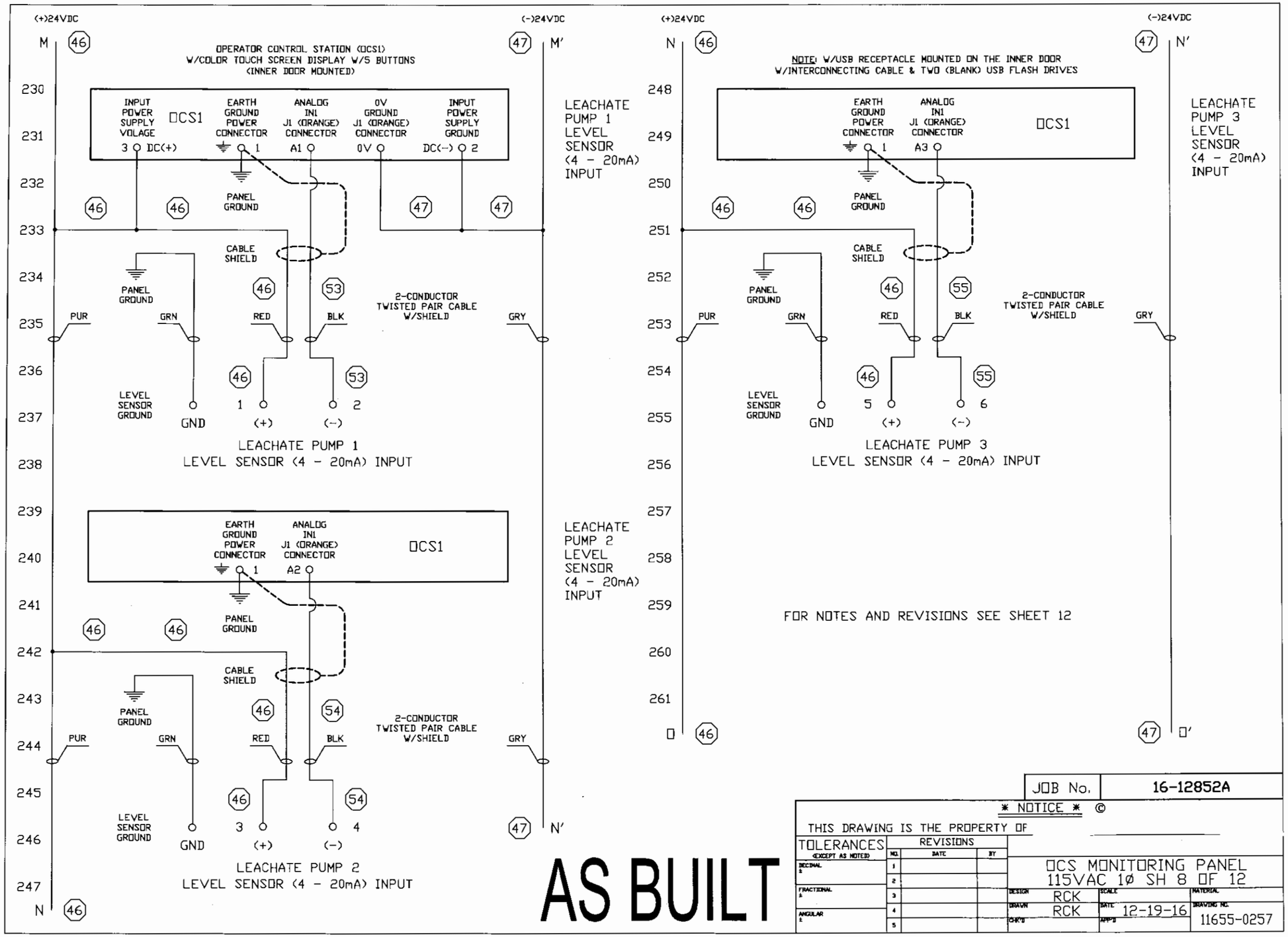
OCS MONITORING PANEL
115VAC 1Ø SH 7 OF 12

DESIGN	RCK	SCALE	MATERIAL
DRAWN	RCK	DATE 12-19-16	DRAWING NO. 11655-0256
CHK'D		APP'D	



AS BUILT

JOB No.	16-12852A

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REVISIONS			
NO.	DATE	BY
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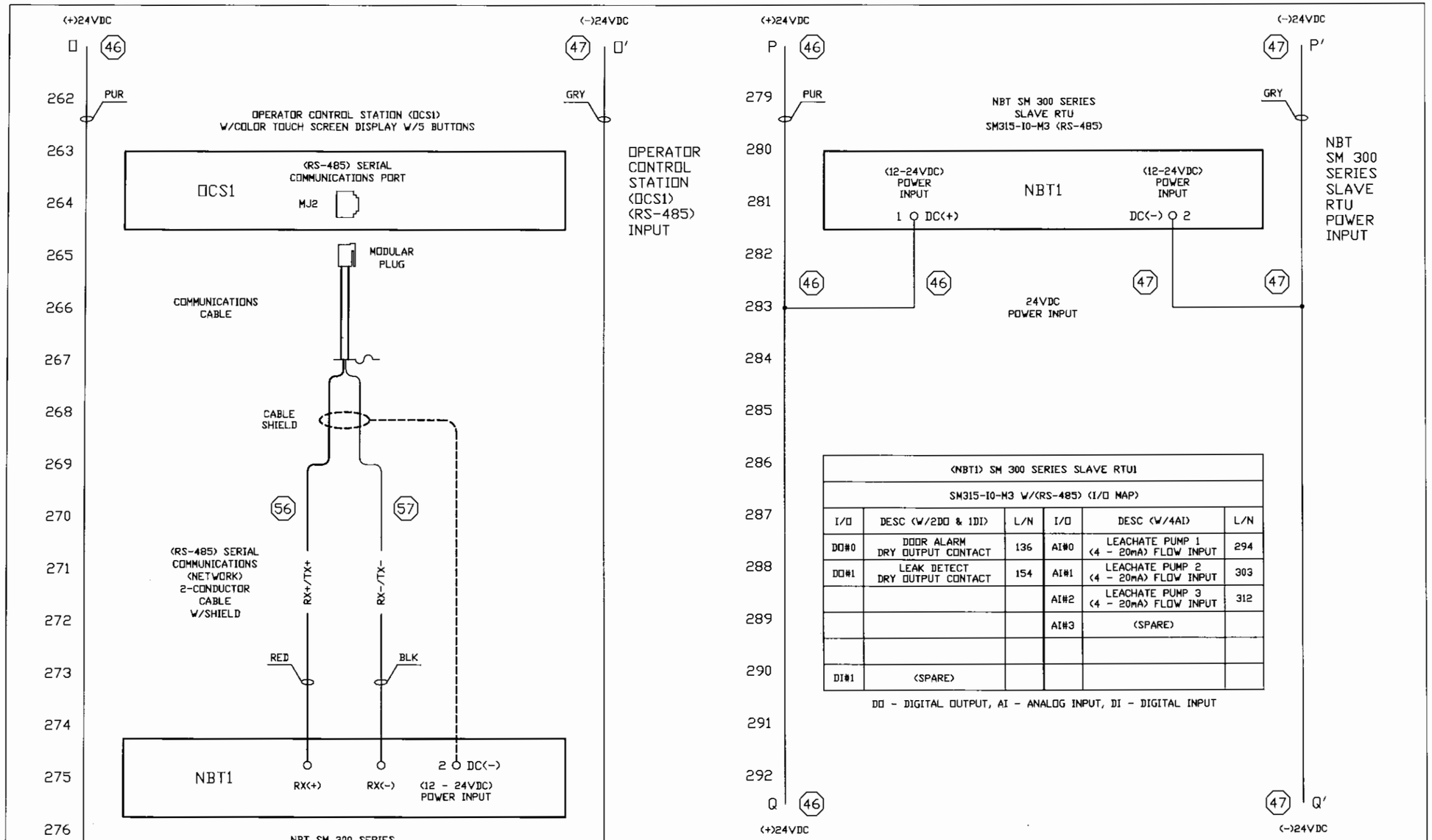
OCS MONITORING PANEL
115VAC 1Ø SH 8 OF 12

DESIGN	RCK	SCALE	MATERIAL
DRAWN	RCK	DATE 12-19-16	DRAWING NO. 11655-0257
CHK'D		APP'D	



(NBT1) SM 300 SERIES SLAVE RTU1					
SM315-I0-M3 W/(RS-485) (I/O MAP)					
I/O	DESC (W/2DO & 1DI)	L/N	I/O	DESC (W/4AI)	L/N
DO#0	DOOR ALARM DRY OUTPUT CONTACT	136	AI#0	LEACHATE PUMP 1 (4 - 20mA) FLOW INPUT	294
DO#1	LEAK DETECT DRY OUTPUT CONTACT	154	AI#1	LEACHATE PUMP 2 (4 - 20mA) FLOW INPUT	303
			AI#2	LEACHATE PUMP 3 (4 - 20mA) FLOW INPUT	312
			AI#3	(SPARE)	
DI#1	(SPARE)				

DO - DIGITAL OUTPUT, AI - ANALOG INPUT, DI - DIGITAL INPUT

FOR NOTES AND REVISIONS SEE SHEET 12

AS BUILT

JOB No. 16-12852A

TOLERANCES (EXCEPT AS NOTED)
DECIMAL ±
FRACTIONAL ±
ANGULAR ±

REVISIONS		
NO.	DATE	BY
1		
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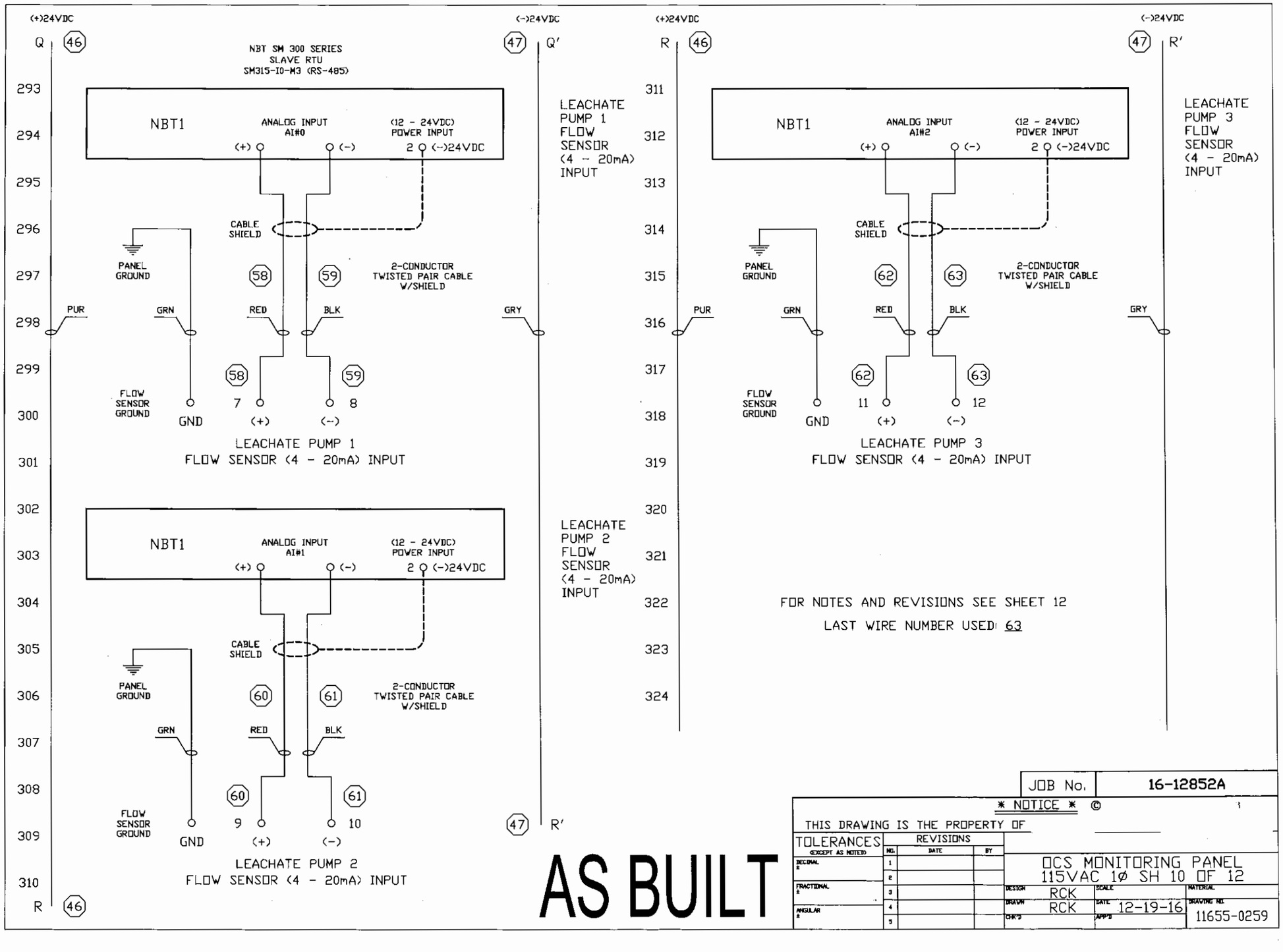
OCS MONITORING PANEL
115VAC 1Ø SH 9 OF 12

DESIGN	RCK	SCALE	MATERIAL
DRAWN	RCK	DATE 12-19-16	DRAWING NO. 11655-0258
CHK'D		APP'D	


(+)24VDC
Q
46
NBT SM 300 SERIES
SLAVE RTU
SM315-I0-M3 (RS-485)
47
(-)24VDC
Q'
293
294
295
296
297
298
299
300
301
NBT1
ANALOG INPUT
AI#0
(12 - 24VDC)
POWER INPUT
(+)
(-)
2
(-)24VDC
CABLE
SHIELD
PANEL
GROUND
58
59
2-CONDUCTOR
TWISTED PAIR CABLE
W/SHIELD
PUR
GRN
RED
BLK
GRY
FLOW
SENSOR
GROUND
GND
7
8
LEACHATE PUMP 1
FLOW SENSOR (4 - 20mA) INPUT
LEACHATE
PUMP 1
FLOW
SENSOR
(4 - 20mA)
INPUT
302
303
304
305
306
307
308
309
310
NBT1
ANALOG INPUT
AI#1
(12 - 24VDC)
POWER INPUT
(+)
(-)
2
(-)24VDC
CABLE
SHIELD
PANEL
GROUND
60
61
2-CONDUCTOR
TWISTED PAIR CABLE
W/SHIELD
GRN
RED
BLK
FLOW
SENSOR
GROUND
GND
9
10
LEACHATE PUMP 2
FLOW SENSOR (4 - 20mA) INPUT
LEACHATE
PUMP 2
FLOW
SENSOR
(4 - 20mA)
INPUT
R
46
47
R'
(+)24VDC
R
46
47
(-)24VDC
R'
311
312
313
314
315
316
317
318
319
320
321
322
323
324
NBT1
ANALOG INPUT
AI#2
(12 - 24VDC)
POWER INPUT
(+)
(-)
2
(-)24VDC
CABLE
SHIELD
PANEL
GROUND
62
63
2-CONDUCTOR
TWISTED PAIR CABLE
W/SHIELD
PUR
GRN
RED
BLK
GRY
FLOW
SENSOR
GROUND
GND
11
12
LEACHATE PUMP 3
FLOW SENSOR (4 - 20mA) INPUT
LEACHATE
PUMP 3
FLOW
SENSOR
(4 - 20mA)
INPUT
FOR NOTES AND REVISIONS SEE SHEET 12
LAST WIRE NUMBER USED: 63
AS BUILT
JOB No. 16-12852A
* NOTICE * ©
THIS DRAWING IS THE PROPERTY OF
TOLERANCES
(EXCEPT AS NOTED)
DECIMAL ±
FRACTIONAL ±
ANGULAR ±
REVISIONS
NO.
DATE
BY
1
2
3
4
5
OCS MONITORING PANEL
115VAC 1Ø SH 10 OF 12
DESIGN RCK
DRAWN RCK
CHK'D
APP'D
SCALE
DATE 12-19-16
MATERIAL
DRAWING NO. 11655-0259

FIELD WIRING TERMINALS

LEVEL SENSOR (4 - 20mA) INPUT

TO TERMINAL 12+13 IN TRANSDUCER BOX L/N 236

1	—	(+) RED
2	—	(-) BLACK
GND	—	SHIELD GROUND

LEACHATE PUMP 1 LEVEL SENSOR (4 - 20mA) INPUT

LEVEL SENSOR (4 - 20mA) INPUT

TO TERMINAL 12+13 IN TRANSDUCER BOX L/N 245

3	—	(+) RED
4	—	(-) BLACK
GND	—	SHIELD GROUND

LEACHATE PUMP 2 LEVEL SENSOR (4 - 20mA) INPUT

LEVEL SENSOR (4 - 20mA) INPUT

TO TERMINAL 12+13 IN TRANSDUCER BOX L/N 254

5	—	(+) RED
6	—	(-) BLACK
GND	—	SHIELD GROUND

LEACHATE PUMP 3 LEVEL SENSOR (4 - 20mA) INPUT

FIELD WIRING TERMINALS

FLOW SENSOR (4 - 20mA) INPUT

L/N 299

7	—	(+)
8	—	(-)
GND	—	SHIELD GROUND

LEACHATE PUMP 1 FLOW SENSOR (4 - 20mA) INPUT

TO TERMINAL 15+16 IN FLOW METER

FLOW SENSOR (4 - 20mA) INPUT

L/N 308

9	—	(+)
10	—	(-)
GND	—	SHIELD GROUND

LEACHATE PUMP 2 FLOW SENSOR (4 - 20mA) INPUT

TO TERMINAL 15+16 IN FLOW METER

FLOW SENSOR (4 - 20mA) INPUT

L/N 317

11	—	(+)
12	—	(-)
GND	—	SHIELD GROUND

LEACHATE PUMP 3 FLOW SENSOR (4 - 20mA) INPUT

TO TERMINAL 15+16 IN FLOW METER

FOR NOTES AND REVISIONS SEE SHEET 12

AS BUILT

JOB No. 16-12852A

* NOTICE * ©

TOLERANCES (EXCEPT AS NOTED)
DECIMAL ±
FRACTIONAL ±
ANGULAR ±

REVISIONS		
NO.	DATE	BY
1		
2		
3		
4		
5		

DCS MONITORING PANEL
115VAC 1Ø SH 11 OF 12

DESIGN RCK	SCALE	MATERIAL	
DRAWN RCK	DATE 12-19-16	DRAWING NO. 11655-0260	
CHK'D	APP'D		

FIELD WIRING TERMINALS

SUMP HIGH LEVEL ALARM (DRY OUTPUT CONTACTS)

TO DIALER ZONE 2 LEVEL HIGH ALARM

	13	LEACHATE PUMP 1	
L/N 49	14	SUMP HIGH LEVEL ALARM	
	15	W/1-N/O & 1-N/C	
		(DRY OUTPUT CONTACTS)	

SUMP HIGH LEVEL ALARM (DRY OUTPUT CONTACTS)

	16	LEACHATE PUMP 2	
L/N 67	17	SUMP HIGH LEVEL ALARM	
	18	W/1-N/O & 1-N/C	
		(DRY OUTPUT CONTACTS)	

SUMP HIGH LEVEL ALARM (DRY OUTPUT CONTACTS)

	19	LEACHATE PUMP 3	
L/N 81	20	SUMP HIGH LEVEL ALARM	
	21	W/1-N/O & 1-N/C	
		(DRY OUTPUT CONTACTS)	

FAILURE (NO FLOW) ALARM (DRY OUTPUT CONTACTS)

TO DIALER ZONE 1 PUMP NO FLOW ALARM

	22	LEACHATE PUMP 1	
L/N 99	23	FAILURE (NO FLOW) ALARM	
	24	W/1-N/O & 1-N/C	
		(DRY OUTPUT CONTACTS)	

FAILURE (NO FLOW) ALARM (DRY OUTPUT CONTACTS)

	25	LEACHATE PUMP 2	
L/N 113	26	FAILURE (NO FLOW) ALARM	
	27	W/1-N/O & 1-N/C	
		(DRY OUTPUT CONTACTS)	

FAILURE (NO FLOW) ALARM (DRY OUTPUT CONTACTS)

	28	LEACHATE PUMP 3	
L/N 131	29	FAILURE (NO FLOW) ALARM	
	30	W/1-N/O & 1-N/C	
		(DRY OUTPUT CONTACTS)	

DOOR ALARM (DRY OUTPUT CONTACTS)

TO DIALER ZONE 5 DOOR ALARM

	31	DOOR ALARM	
L/N 145	32	W/1-N/O & 1-N/C	
	33	(DRY OUTPUT CONTACTS)	

FIELD WIRING TERMINALS

LEAK DETECT ALARM (DRY OUTPUT CONTACTS)

	34	LEAK DETECT ALARM	
L/N 163	35	W/1-N/O & 1-N/C	
	36	(DRY OUTPUT CONTACTS)	

PUMP RUN (DRY INPUT CONTACT)

TO STARTER NO AUX CONTACT

L/N 200	37	LEACHATE PUMP 1 RUN	
	38	N/O (DRY INPUT CONTACT)	

PUMP RUN (DRY INPUT CONTACT)

TO STARTER NO AUX CONTACT

L/N 205	39	LEACHATE PUMP 2 RUN	
	40	N/O (DRY INPUT CONTACT)	

PUMP RUN (DRY INPUT CONTACT)

TO STARTER NO AUX CONTACT

L/N 210	41	LEACHATE PUMP 3	
	42	N/O (DRY INPUT CONTACT	

DOOR ALARM (DRY INPUT CONTACT)

TO DOOR CONTACT NO

L/N 218	43	DOOR ALARM	
	44	N/O (DRY INPUT CONTACT)	

LEAK DETECT ALARM (DRY INPUT CONTACT)

TO SENSAPHONE PROGRAMABLE OUTPUT

L/N 223	45	LEAK DETECT ALARM	
	46	N/O (DRY INPUT CONTCT)	

NOTES:

1. NOT PART OF CONTROLLER

AS BUILT

JOB No. 16-12852A

TOLERANCES (EXCEPT AS NOTED)
DECIMAL ±
FRACTIONAL ±
ANGULAR ±

REVISIONS		
NO.	DATE	BY
1		
2		
3		
4		
5		

DCS MONITORING PANEL
115VAC 1Ø SH 12 OF 12

DESIGN	RCK	SCALE	MATERIAL
DRAWN	RCK	DATE 12-19-16	DRAWING NO. 11655-0261
CHK'D		APP'D	

MOTOR	HP	VOLTAGE	FLA	FUSE SIZE
LEACHATE PUMP	1/2	120		

CAUTION: DO NOT CONNECT TO THE HIGH LEG OF AN 'OPEN' DELTA POWER SUPPLY TO PREVENT PROBLEMS SUCH AS POOR PERFORMANCE, OVERLOAD TRIPPING OR ELECTRICAL EQUIPMENT FAILURE DUE TO CURRENT UNBALANCE

NOTE: MAIN OVERCURRENT PROTECTION TO BE PROVIDED BY OTHERS

DANGER
HIGH VOLTAGE
CKT #1
120 V
AC 1Ø

L1
L2
GND
GND

MAIN
DISCONNECT
____AMPS

CAUTION: DISCONNECT POWER BEFORE SERVICING THIS PANEL

SOLUTIA
JUDITH LANE

Pump #1

#12AWG (BLK)

MC1
MC1

MC1
3 4
R1

PRIMARY

MTR1
LEACHATE PUMP MOTOR

GND

pump #1

EATON
ECN050IAAA-R631B
SIZE 0 MOTOR STARTER

FIELD WIRING TERMINALS

LINE

CKT #1

L1
L2
120 VAC 1Ø 60HZ
____ AMPS
GND — GROUND

LOAD

R
B
GND
LEACHATE PUMP MOTOR

	TYPE	RATING VOLTS	RATING AMPS
	---- -		

AS BUILT

JOB No. 16-12852BCD

TOLERANCES (EXCEPT AS NOTED)
DECIMAL ±
FRACTIONAL ±
ANGULAR ±

REVISIONS NO.	DATE	BY
1		
2		
3		
4		
5		

LOWRY
PUMP CONTROLLER
120 VAC 1Ø SH 1 OF 6

DESIGN	RCK	SCALE	MATERIAL
DRAWN	RCK	DATE 12-20-16	DRAWING NO. 11656-0250
CHK'D		APP'D	

D

D'

108

109

110

111

112

113

114

115

116

117

118

119

120

121

122

123

124

125

SELECTOR SWITCH (SS1)
TARGET TABLE

	(H)	□	A
A1	X		
A2			X

X - CONTACT CLOSED
(H) □ A - HAND/OFF/AUTO

NOTE 2

LEACHATE PUMP CONTROL

(H) □ A

3 X 4

A1

4 X 3

A2

SS1

OUTER DOOR MOUNTED

(REMOTE) PUMP START/STOP CONTROL

3 4

(N/O)

DRY INPUT CONTACT

R1

CONTACT CLOSES ON PUMP START/RUN

LMSA 2401
LEVEL CONTROL

LEAK DETECTOR

LOW FLOW

TRANSDUCER FAILURE

1 2

NO (Held closed)

R12

R9

APD1090
LEVEL SENSOR FAILURE ALARM RELAY

115VAC COIL

MC1

CONTACTOR

AUX

G

R

LEACHATE PUMP RUN LIGHT

LEACHATE PUMP OFF LIGHT

37 38

MC1

LEACHATE PUMP RUN INPUT 200

LEACHATE PUMP CONTROL

AS BUILT

JOB No.	16-12852BCD

* NOTICE * ©

TOLERANCES (EXCEPT AS NOTED)	REVISIONS		
	NO.	DATE	BY
DECIMAL ±	1		
	2		
FRACTIONAL ±	3		
	4		
ANGULAR ±	5		

PUMP CONTROLLER

PRIMARY PUMP 1 SH 2 OF 6

DESIGN	RCK	SCALE	MATERIAL
DRAWN	RCK	DATE 12-20-16	DRAWING NO. 11656-0253
CHK'D		APP'D	

MOTOR	HP	VOLTAGE	FLA	FUSE SIZE
LEACHATE PUMP	1/2	120		

CAUTION: DO NOT CONNECT TO THE HIGH LEG OF AN 'OPEN' DELTA POWER SUPPLY TO PREVENT PROBLEMS SUCH AS POOR PERFORMANCE, OVERLOAD TRIPPING OR ELECTRICAL EQUIPMENT FAILURE DUE TO CURRENT UNBALANCE

NOTE: MAIN OVERCURRENT PROTECTION TO BE PROVIDED BY OTHERS

DANGER
HIGH VOLTAGE
CKT#3
120 V
AC 1Ø

L1
L2
GND

GND

MAIN
DISCONNECT

____AMPS

CAUTION: DISCONNECT POWER BEFORE SERVICING THIS PANEL

SOLUTIA
JUDITH LANE

#12AWG
(BLK)

Pump#2

MC1
MC1

MC1
3 4
R2

SECONDARY

MTR1
LEACHATE
PUMP
MOTOR

GND

Pump#2

EATON
ECN0501AAA-R631B
SIZE 0 MOTOR STARTER

FIELD WIRING TERMINALS

LINE

CKT# 3

L1
L2 — 120 VAC 1Ø 60HZ
____ AMPS

GND — GROUND

LOAD

R
B — LEACHATE PUMP MOTOR

GND

	TYPE	RATING VOLTS	RATING AMPS

AS BUILT

JOB No.

* NOTICE *

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TOLERANCES (EXCEPT AS NOTED)	REVISIONS NO.	DATE	BY
DECIMAL ±	1		
FRACTIONAL ±	2		
ANGULAR ±	3		
	4		
	5		

PUMP CONTROLLER
120 VAC 1Ø SH 3 OF 6

DESIGN	SCALE	MATERIAL
RCK		
DRAWN RCK	DATE 12-20-16	DRAWING NO. 11656-0250
CHK'D	APP'D	

D

D'

108

109

110

111

112

113

114

115

116

117

118

119

120

121

122

123

124

125

SELECTOR SWITCH (SS1)
TARGET TABLE

	(H)	O	A
A1	X		
A2			X

X - CONTACT CLOSED
(H) O A - HAND/OFF/AUTO

NOTE 2

LEACHATE PUMP CONTROL

(H) O A

3 X 4

A1

4 X 3

A2

SS1

OUTER DOOR MOUNTED

(REMOTE) PUMP START/STOP CONTROL

3 4

(N/O)

DRY INPUT CONTACT

R1

CONTACT CLOSES ON PUMP START/RUN

LMSA 2401
LEVEL CONTROL

LEAK DETECTOR

LOW FLOW

TRANSDUCER FAILURE

1 2

NO (held closed)

R12

R10

APD1090
LEVEL SENSOR FAILURE ALARM RELAY

115VAC COIL

MC1

CONTACTOR

AUX

39 40

MC1

LEACHATE PUMP CONTROL

LEACHATE PUMP RUN LIGHT

G

R

LEACHATE PUMP OFF LIGHT

LEACHATE PUMP RUN INPUT 205

AS BUILT

JOB No.	16-12852BCD

* NOTICE *

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TOLERANCES (EXCEPT AS NOTED)	REVISIONS		
	NO.	DATE	BY
DECIMAL ±	1		
	2		
FRACTIONAL ±	3		
	4		
ANGULAR ±	5		

PUMP CONTROLLER
SECONDARY Pump 2 SH4 OF 6

DESIGN	RCK	SCALE	MATERIAL
DRAWN	RCK	DATE 12-20-16	
CHK'D		APP'D	11656-0253

MOTOR	HP	VOLTAGE	FLA	FUSE SIZE
LEACHATE PUMP	1/2	120		

CAUTION: DO NOT CONNECT TO THE HIGH LEG OF AN "OPEN" DELTA POWER SUPPLY TO PREVENT PROBLEMS SUCH AS POOR PERFORMANCE, OVERLOAD TRIPPING OR ELECTRICAL EQUIPMENT FAILURE DUE TO CURRENT UNBALANCE

NOTE: MAIN OVERCURRENT PROTECTION TO BE PROVIDED BY OTHERS

DANGER
HIGH VOLTAGE
CKT #5
120 V
AC 1Ø

L1
L2
GND
GND

MAIN
DISCONNECT
____ AMPS

CAUTION: DISCONNECT POWER BEFORE SERVICING THIS PANEL

SOLUTIA
JUDITH LANE

#12AWG
(BLK)

Pump #3

MC1
MC1

MC1
3 4
R3

CAPillary

MTR1
LEACHATE
PUMP
MOTOR

GND

pump #3

EATON
ECN0501AAA-R631B
SIZE 0 MOTOR STARTER

FIELD WIRING TERMINALS

LINE

CKT #5

L1
L2
120 VAC 1Ø 60HZ
____ AMPS
GND —— GROUND

LOAD

R
B
GND
LEACHATE
PUMP
MOTOR

	RATING		
	TYPE	VOLTS	AMPS

AS BUILT

JOB No. 16-12852BCD

* NOTICE *
THIS DRAWING IS THE PROPERTY OF

TOLERANCES (EXCEPT AS NOTED)	REVISIONS NO.	DATE	BY
DECIMAL ±	1		
FRACTIONAL ±	2		
ANGULAR ±	3		
	4		
	5		

PUMP CONTROLLER
120 VAC 1Ø SH 5 OF 6

DESIGN	RCK	SCALE	MATERIAL
DRAWN	RCK	DATE 12-20-16	DRAWING NO. 11656-0250
CHK'D		APP'D	

D

D'

108

109

110

111

112

113

114

115

116

117

118

119

120

121

122

123

124

125

SELECTOR SWITCH (SS1)
TARGET TABLE

	(H)	O	A
A1	X		
A2			X

X - CONTACT CLOSED
(H) O A - HAND/OFF/AUTO

NOTE 2

LEACHATE PUMP CONTROL

(H) O A

3 4 A1

4 3 A2

SS1

OUTER DOOR MOUNTED

(REMOTE) PUMP START/STOP CONTROL

3 4

LEAK DETECTOR

LOW FLOW

TRANSDUCER FAILURE

1 2

(N/O)

DRY INPUT CONTACT

R1 R12 R11

NO (Held closed)

CONTACT CLOSES ON PUMP START/RUN

LMSA 2401
LEVEL CONTROL

APD1090
LEVEL SENSOR
FAILURE
ALARM
RELAY

115VAC COIL

MC1

CONTACTOR

AUX

41 42

MC1

LEACHATE PUMP CONTROL

LEACHATE PUMP RUN LIGHT

LEACHATE PUMP OFF LIGHT

LEACHATE PUMP RUN INPUT
210

AS BUILT

JOB No.	16-12852BCD

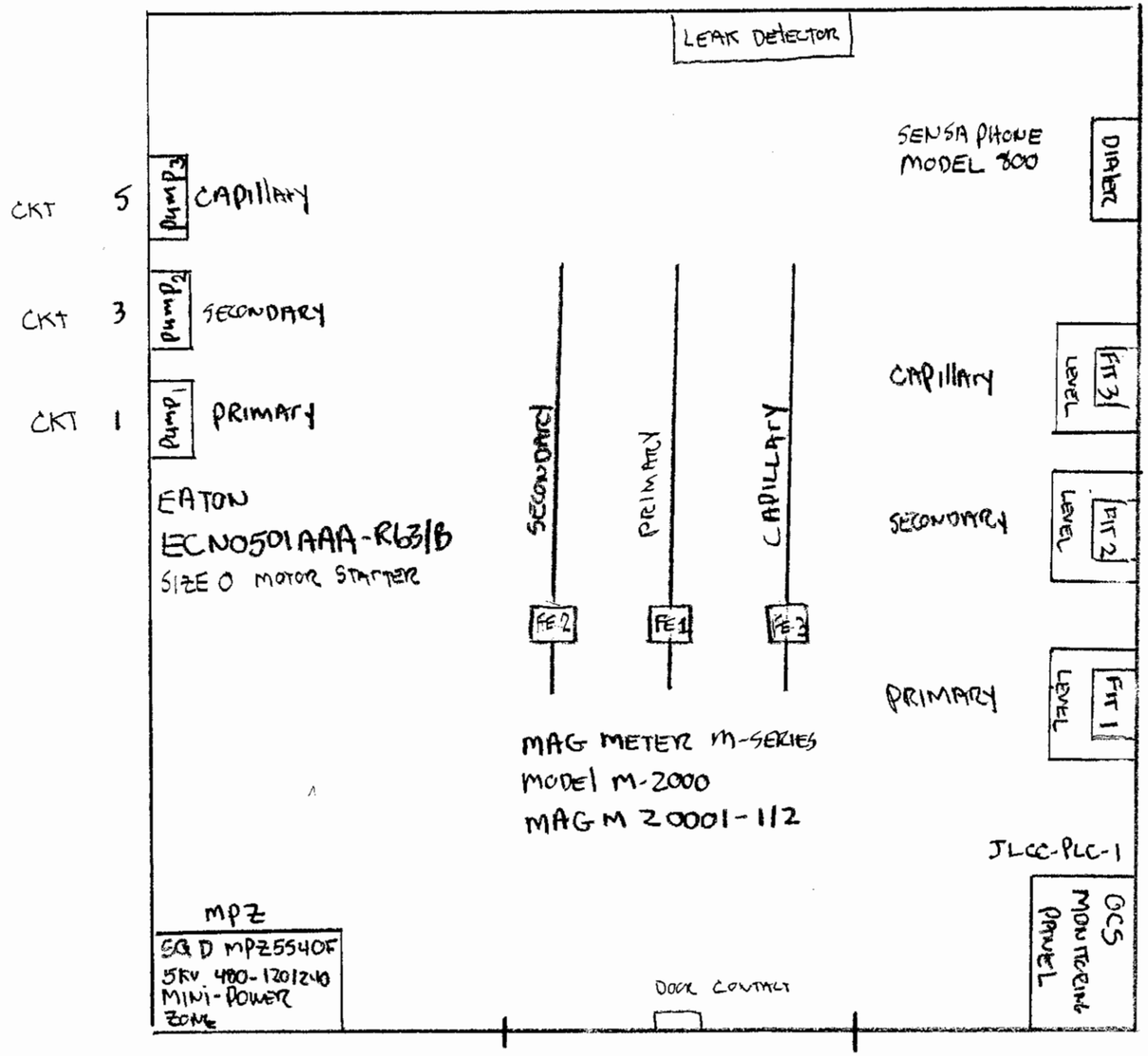
* NOTICE *

THIS DRAWING IS THE PROPERTY OF

TOLERANCES (EXCEPT AS NOTED)	REVISIONS		
	NO.	DATE	BY
DECIMAL ±	1		
	2		
FRACTIONAL ±	3		
	4		
ANGULAR ±	5		

PUMP CONTROLLER
CADIARY PUMP 3 SH 6 OF 6

DESIGN	RCK	SCALE	MATERIAL
DRAWN	RCK	DATE 12-20-16	DRAWING NO. 11656-0253
CHK'D		APP'D	



SENSA PHONE MODEL 800
(DIALER)

ZONE	1	PUMP NO FLOW	120V H
	2	HIGH LEVEL ALARM	N
	3	TRANSDUCER FAILURE	G
	4	LEAK DETECTOR	
	5	DOOR ALARM	
	6	LOW TEMP	
	7	POWER FAILURE	
	8	SPARE	

LEVEL MASTER LEVEL CONTROL METER
LMSA 2401 (EPG CH1900)

120V	H	SENSOR INPUT 4-20	1 +	RD	PUMP	START STOP
	N		2 -	BLACK		3
	G		GND	SHIELD		4
4-20 OUT	12+					
	13-					

FIT-x MAG METER M-SERIES

120V	H	
	N	
	G	
4-20 OUT	16+	
	15-	

OCS

H	
N	
G	

1	pump 1
3	pump 2
5	pump 3
7	BUILDING LIGHTS + RECEPT

2, 4	MAIN (30A)
6	FLOW + LEVEL TRANSMITTERS
8	OCS
10	RECEPT AT pumps
12	Spare

N

Attachment 1 - AECOM Daily Field Reports and Summary Photographic Log

AECOM

Daily Field Report

Leachate Management System Installation and Piping Connection to the POTW
Project No.:
AECOM Personnel: A. Day **Report No.:** 001
Contractor: GRP, Inc **Date:** 10/31/16
Weather: Sunny, 75-80's

Progress of work:

Oversight Activities: A.Day onsite to provide oversight of work at Solutia site for the project "Leachate Management System Installation and Piping Connection to POTW'. GRP – Site Super (Tim Grove), Hayden Foreman (Ricky), 2 laborers, 1 Operator. Electrician onsite briefly in the morning (no work conducted). GRP Project Manager Jeff Hasty onsite briefly in AM. A. Day provided construction oversight.

Health and Safety:

- GRP personnel conducted the morning safety/tailgate meeting at 7:00am. Safety topic was glove safety.

Stormwater Pollution Prevention Activities: None.

Construction Activities:

- Hayden removed ~20 feet of fencing to access northern property.
- Hayden began excavating northwards from the fence (trenched 160 ft at ~4 ft depth).
- Installed orange construction fencing around the open trench and across the gap in the chain-link fence.

Equipment:

- Doosan Excavator
- Office Trailer/Conex
- 2 port-o-potties w/ 2 sinks
- HDPE Tracked Welder unit
- Hayden Work Truck
- GRP Work Truck

Materials:

- 1 roll - 4" HDPE DR-11
- 2 roll – 1.5" HDPE DR-11
- 1-roll – 2" HDPE DR-11
- Various HDPE fittings

Dumpsters: Rolloff Box #20411

.

Notes and Discussions:

- Kickoff meeting was today at 7:00AM. Topics discussed included:

  - Steve Smith (Solutia) informed GRP/Hayden they would need to have a rolloff box provided for trash/debris and the plastic sheeting during excavation
  - Dave Lowry will check with AECOM engineers to see if grout in manhole is necessary item
  - Monitoring well was noted in the adjacent property to the north approximately 5' off the superfund site fence line.
- A. Day/D. Lowry/Steve Smith all discussed options for wet decon. Will plan to use secondary contained area, plastic, and sump pump to system.
- A. Day/D. Lowry/Steve Smith all discussed options for if trench fills up with groundwater and/or stormwater – Will plan to direct pipe into old sampling shed and treat using the system.
- A . Day discussed with N. McNurlen capabilities of treatment system (~15-20pgm) and the need to keep the water levels in the tanks low.
- A. Day/D. Lowry/Steve Smith visually confirmed location of existing lines from primary/secondary leachate pumps to treatment shed.
- A. Day/N. McNurlen pulled capillary and secondary leachate pumps w/o issue.
- During trenching activities no abnormal soils/debris/trash were encountered.
- Tim Grove (GRP) will provide A. Day with a copy of the JSA from Hayden and GRP this evening via email.
- Tim Grove (GRP) was not aware of a daily report format requested by Solutia.

Photographs:

1. Looking from North to South – Photo of trenching
2. Looking west – Soils on plastic
3. Looking northwest - 20' section of fencing removed
4. Looking North – Final trenching progress for the day

GRP offsite at 3:30 pm.

A.Day offsite at 4:00 pm.

Signed by: 

AECOM

Daily Field Report

Leachate Management System Installation and Piping Connection to the POTW
Project No.:
AECOM Personnel: A. Day **Report No.:** 002
Contractor: GRP, Inc **Date:** 11/01/16
Weather: Sunny, 75-80's

Progress of work:

Oversight Activities: A.Day onsite to provide oversight of work at Solutia site for the project "Leachate Management System Installation and Piping Connection to POTW'. GRP – Site Super (Tim Grove), Hayden Foreman (Ricky), 2 laborers, 1 Operator. GRP Project Manager Jason Baze onsite from 10am to 3:30. Kevin Z. (GRP Safety) onsite from ~9-1130AM). A. Day provided construction oversight.

Health and Safety:

- GRP personnel conducted the morning safety/tailgate meeting at 7:00am. Safety topic was to be aware on Queeny avenue when working in the area.

Stormwater Pollution Prevention Activities: None.

Construction Activities:

- Hayden removed and additional ~20 feet of fencing (west of original 20') to access northern property.
- Hayden continued excavating northwards from the fence (trenched 135 ft at ~4 ft depth – About 14 feet short of the sharp turn west in the trench). Hayden then began trenching east from the sewer manhole and made approximately 35 feet of progress.
- Installed orange construction fencing around the open trench and across the gap in the chain-link fencing
- Installed jersey barriers and construction fencing along Queeny avenue.

Equipment:

- Doosan Excavator
- Office Trailer/Conex
- 2 port-o-potties w/ 2 sinks
- HDPE Tracked Welder unit
- Hayden Work Truck
- GRP Work Truck
- Pipetamer

Materials:

- 1 roll - 4" HDPE DR-11
- 2 roll – 1.5" HDPE DR-11
- 1-roll – 2" HDPE DR-11
- Various HDPE fittings
- 4 loads sand (delivered today)

- 4 loads CA-6 (delivered today)
- Various metal pipe fittings (delivered today)

Dumpsters: Rolloff Box #20411

.

Notes and Discussions:

- Unsuitable backfill noted ~22' past property boundary running 135 ft to the north. Unsuitable backfill included debris (glass, metal, cardboard, rubber, wood, trash ,etc.) with light odor and discoloration. Soil was segregated, per Solutia, on plastic and covered at end of day. Informed GRP of unsuitable backfill. Northern most 32 ft of the 135 ft run had a more significant odor.
- Jason Baze (GRP) proposed using clean rock (1" or ¾") as backfill (above the sand) to approximately 1 foot below ground surface. A. Day told GRP to forward as an email the proposal to D. Lowry and Solutia.
- GRP asked where to stockpile the segregated soil in question from trench. Soil was placed on plastic, covered and segregated for further evaluation by Solutia.
- Jason Baze of GRP discussed the method of install and placement of thrust blocks. He will send his proposal in email to D. Lowry and Solutia. He will need to know if one is required at the 45 angle at the property boundary.

Photographs:

1. Looking from Northeast along trenching towards Queeny Avenue
2. Looking east on Queeny along proposed trench showing jersey barrier setup
3. Unsuitable backfill
4. Unsuitable backfill
5. Looking northeast along trenching towards Queeny Ave
6. Slight yellow staining
7. Looking west along trench from sewer manhole
8. Looking north at additional footage of fence opening
9. Example of debris found in trench

GRP offsite at 3:30 pm.

A.Day offsite at 4:30 pm.

Signed by: 

AECOM

Daily Field Report

Leachate Management System Installation and Piping Connection to the POTW
Project No.:
AECOM Personnel: A. Day **Report No.:** 003
Contractor: GRP, Inc **Date:** 11/02/16
Weather: Sunny, 75-80's

Progress of work:

Oversight Activities: A.Day onsite to provide oversight of work at Solutia site for the project "Leachate Management System Installation and Piping Connection to POTW'. GRP – Site Super (Tim Grove), Hayden Foreman (Ricky Smith), 2 laborers (Teresa Foote, Damon Williams), 1 Operator (Steve Flowers). GRP Project Manager Jason Baze onsite from 10:30 to 3:30. Kevin Zumbaum (GRP Safety) onsite from ~1230-230 A. Day provided construction oversight.

Health and Safety:

- GRP personnel conducted the morning safety/tailgate meeting at 7:00am. Safety topic was to be aware of swing radius of bucket and counterweight.

Stormwater Pollution Prevention Activities: None.

Construction Activities:

- Hayden completed excavation of trenching
- Hayden installed liner in trench up to Weisse property and put down sand bedding (6") 160 ft
- GRP laid out 500 ft of 4" DR-11 HDPE piping
- Hayden filled B-20411 with impacted soil
- Juneau onsite for AECOM – Marked 4 fence posts with 410 elevation and set lath at 407.65'

Equipment:

- Doosan Excavator
- Office Trailer/Conex
- 2 port-o-potties w/ 2 sinks
- HDPE Tracked Welder unit
- Hayden Work Truck
- GRP Work Truck
- Pipetamer
- Plate tamper
- Case Skidsteer

Materials:

- 1 roll - 4" HDPE DR-11
- 2 roll – 1.5" HDPE DR-11
- 1-roll – 2" HDPE DR-11
- Various HDPE fittings

- Various metal pipe fittings (Additional delivered today)

Dumpsters: Rolloff Box #20411

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Notes and Discussions:

- Tim has been emailing nightly JSAs, load tickets, etc.
- Discussed with GRP that utility tape was to be installed 12” above installed piping
- Discussion with GRP – Sand bedding will be required above piping in areas where clean rock is used as backfill.
- S. Smith of Solutia requested that AECOM collect PID readings along Queeny Avenue
- S. Smith of Solutia requested that AECOM sample and profile the impacted soil for Solutia

Photographs:

1. Looking west along Queeny avenue after rainfall event
2. Looking south from Weisse property line – Lined trench with sand
3. Looking north at strung out 4” HDPE

GRP offsite at 3:30 pm.

A.Day offsite at 11:15 am. N McNurlen checked in periodically in afternoon.

Signed by:

AECOM

Daily Field Report

Leachate Management System Installation and Piping Connection to the POTW
Project No.:
AECOM Personnel: A. Day **Report No.:** 004
Contractor: GRP, Inc **Date:** 11/03/16
Weather: Sunny, 70's

Progress of work:

Oversight Activities: A.Day onsite to provide oversight of work at Solutia site for the project "Leachate Management System Installation and Piping Connection to POTW'. GRP – Site Super (Tim Grove), Hayden Foreman (Ricky Smith), 2 laborers (Teresa Foote, Damon Williams), 1 Operator (Steve Flowers), 1 electrician (Kevin Maly) 8am to 12 noon. GRP Project Manager Jason Baze onsite from 1200 to 3:30. Kevin Z. (GRP Safety) onsite periodically – 7-9am, and 1230 to 130pm. A. Day provided construction oversight.

Health and Safety:

- GRP personnel conducted the morning safety/tailgate meeting at 7:00am. Safety topic was pinch points and sloppy, wet conditions.

Stormwater Pollution Prevention Activities: None.

Construction Activities:

- Hayden filled 3 boxes (#20856, #20474, #20957) with impacted soils (approximately 2-3 rolloff boxes worth of material still need to be loaded in)
- AECOM collected PID readings up and down Queeny avenue along the trench – no issues observed
- AECOM collected a composite soil sample (all piles composited into one sample) of impacted soil.
- Lowry electric provided power to GRP's site trailer

Equipment:

- Doosan Excavator
- Office Trailer/Conex
- 2 port-o-potties w/ 2 sinks
- HDPE Tracked Welder unit
- Hayden Work Truck
- GRP Work Truck
- Pipetamer
- Plate tamper
- Case Skidsteer
- Roller (delivered today)

Materials:

- 1 roll - 4" HDPE DR-11
- 2 roll – 1.5" HDPE DR-11
- 1-roll – 2" HDPE DR-11

- Various HDPE fittings
- Various metal pipe fittings
- 1 load of sand, 2 loads of CA-6
- 1 Roll Propex GEOtEX 104F
- 24’ of 12” galvanized culvert
- Shed (delivered today)

Dumpsters: Rolloff Box #20411, #20856, #20474, #20957 (filled), boxes # 20923, 20874 (empty)
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Notes and Discussions:

- Tim has been emailing nightly JSAs, load tickets, etc.
- Did note a small area of yellow staining at the southern most pile of impacted soil. Area was cleaned up, scraped and loaded into a rolloff.
- Spoke with Jason Baze (GRP) about making sure soil and rolloffs were covered more securely.
- Trench walls did sluff on somewhat due to heavy rain evening off 11/2, however most areas will still allow for 42” minimum pipe cover. Additionally, trench did not hold more than a few inches of stormwater.
- Spoke with Jason Baze about the need for plastic in the trench. It is only necessary in sections where individuals without HAZWOPER training will be getting into the trench.

Photographs:

1. Looking south along trench.
2. Looking north where impacted piles were removed and loaded into rolloffs.

GRP offsite at 3:30 pm.

A.Day offsite at 4:30 pm.

Signed by: 

AECOM

Daily Field Report

Leachate Management System Installation and Piping Connection to the POTW
Project No.:
AECOM Personnel: A. Day **Report No.:** 005
Contractor: GRP, Inc **Date:** 11/04/16
Weather: Sunny, 70's

Progress of work:

Oversight Activities: A.Day onsite to provide oversight of work at Solutia site for the project "Leachate Management System Installation and Piping Connection to POTW'. GRP – Site Super (Tim Grove), Hayden Foreman (Ricky Smith), 2 laborers (Teresa Foote -1/2 day, Damon Williams), 1 Operator (Steve Flowers), 2 pipefitters (9am thru end of day) (/Josh Hanna and Chris Wright). Kevin Z. (GRP Safety) onsite periodically – 7am, 10am. A. Day provided construction oversight.

Health and Safety:

- GRP personnel conducted the morning safety/tailgate meeting at 7:00am. Safety topic was to watch out for your coworkers.

Stormwater Pollution Prevention Activities: None.

Construction Activities:

- Hayden filled 3 boxes (#20500, 20923, 20874)) with impacted soils
- GRP stretched out 1.5" and 2" HDPE piping
- Hayden excavated additional areas of the trench at the 45 degree bend at the Weisse property to allow for a "sweep" in the pipe
- Hayden continued laying sand bedding northwards and minor cleaning out of trench due to sluffing. Hayden made it to Queeny Ave.
- GRP began marking out cutouts for the shed

Equipment:

- Doosan Excavator
- Office Trailer/Conex
- 2 port-o-potties w/ 2 sinks
- HDPE Tracked Welder unit
- Hayden Work Truck
- GRP Work Truck
- Pipetamer
- Plate tamper
- Case Skidsteer
- Roller

Materials:

- 1 roll - 4" HDPE DR-11
- 2 roll – 1.5" HDPE DR-11

- 1-roll – 2” HDPE DR-11
- Various HDPE fittings
- Various metal pipe fittings
- 1 Roll Propex GEOTEX 104F
- 24’ of 12” galvanized culvert

Dumpsters: Rolloff Box #20411, #20856, #20474, #20957, #20500, #20186 (empty), #20923, #20874
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Notes and Discussions:

- A. Day noted that GRP had begun digging west of the edge of the 10’ easement with Weisse. A. Day ensured they knew this and explained if they wanted to sweep they’d need to excavate the bank closer to the fence. The piping will be installed within the 10’ easement.
- Hadyen explained to AECOM that they may have overfilled the rolloff boxes. 7 boxes could turn into 9 depending on the weight.

Photographs:

1. Looking north at trench with sand bedding
2. Looking north after impacted soil loaded into rolloff boxes
3. Looking west at full rolloff boxes

GRP offsite at 3:30 pm.

A.Day offsite at 3:30 pm.

Signed by: 

AECOM

Daily Field Report

Leachate Management System Installation and Piping Connection to the POTW
Project No.:
AECOM Personnel: A. Day
Report No.: 006
Contractor: GRP, Inc
Date: 11/07/16
Weather: Sunny, 70's

Progress of work:

Oversight Activities: A.Day onsite to provide oversight of work at Solutia site for the project "Leachate Management System Installation and Piping Connection to POTW'. GRP – Site Super (Tim Grove – 7am to Noon), Hayden Foreman (Ricky Smith), 2 laborers (Henry Poole, Damon Williams), 1 Operator (Steve Flowers), 2 pipefitters (7am until ~1pm) (/Josh Hanna and Chris Wright). Kevin Z. (GRP Safety) (onsite 7am, 10am, afternoon to cover for Tim). A. Day provided construction oversight.

Health and Safety:

- GRP personnel conducted the morning safety/tailgate meeting at 7:00am. Safety topic was swing radius and to watch your footing.

Stormwater Pollution Prevention Activities: None.

Construction Activities:

- Hayden finished laying 6" sand bedding north of the future metering house location.
- Hayden compacted sand bedding north of future metering house location.
- Hayden began trenching east of future metering house location. Trenching began at capillary pump location and moved westwards.
- GRP/Pipefittings strung out HDPE pipe long trench north of future metering house location (4" and 2")

Equipment:

- Doosan Excavator
- Office Trailer/Conex
- 2 port-o-potties w/ 2 sinks
- HDPE Tracked Welder unit
- Hayden Work Truck
- GRP Work Truck
- Plate tamper
- Case Skidsteer
- Roller
- Pipetamer

Materials:

- 1 roll - 4" HDPE DR-11
- 2 roll – 1.5" HDPE DR-11
- 1-roll – 2" HDPE DR-11
- Various HDPE fittings

- Various metal pipe fittings
- 1 Roll Propex GEOTEX 104F
- 24’ of 12” galvanized culvert

Dumpsters: Rolloff Box #20411, #20856, #20474, #20957, #20500, #20186 (empty), #20923, #20874
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Notes and Discussions:

- A.Day/ Dave Lowry / Steve Smith all discussed change in plans to allow for 40” of cover over lines in trenches (instead of original design of 42”)
- Steve Smith asked AECOM to conduct daily PID readings along Queeny Avenue and the trench.
- A. Day spoke with Joe Grana about odor complaints at Cerro on 11/4/16. Mr. Grana stated there were odor complaints on 11/4/16 (he was off for the day) from other employees. They smelled mothballs. I told him we had monitored the air on Queeny road on 11/3/16 and found no readings on the PID above 0.0.
- Tim of GRP asked if it would be OK to put the 4” air relief valves on the outside of the building. A. Day stated the plans show the valves on the interior and the plans should be followed.
- A. Day spoke with Hayden (Ricky) about the plan for the potentially overloaded rolloffs. Hayden stated when the waste was ready to go offsite, drivers will make the determination if they boxes are too full. If they are, transfer of soils will occur to get them to the correct weight (if necessary). This will be revisited if AECOM is not confident the impacted soils will be profiled and ready to go offsite before Hayden’s scope is complete.
- Hayden encountered two sets (believed to be the same 2) of electrical conduit in the trench east of the metering house, that power the current landfill pumps. A. Day will provide detailed sketch.
- A. Day collected PID readings along Queeny Avenue and along the trench. No readings above 0.0 ppm.
- Tim left the site today at lunch for another project. Kevin Z. filled in for him. A. Day will ask Tim on 11/8 when the electrician plans to look at the trenches to the east of metering house for conduit installation.

Photographs:

1. Looking west along trench along Queeny (trench is prepped for pipe with sand bedding)
2. Looking south along trench (trench is prepped for pipe with sand bedding)
3. Looking west along beginning of trench for 1.5” primary, secondary, and capillary lines, and electrical conduits.

GRP offsite at 3:30 pm.

A.Day offsite at 3:30 pm.

Signed by: 

AECOM

Daily Field Report

Leachate Management System Installation and Piping Connection to the POTW
Project No.:
AECOM Personnel: A. Day
Report No.: 007
Contractor: GRP, Inc
Date: 11/08/16
Weather: Rainy, 60's

Progress of work:

Oversight Activities: A.Day onsite to provide oversight of work at Solutia site for the project "Leachate Management System Installation and Piping Connection to POTW'. GRP – Site Super (Tim Grove), Hayden Foreman (Ricky Smith), 2 laborers (Henry Poole, Damon Williams), 1 Operator (Steve Flowers), 2 pipefitters (/Josh Hanna and Chris Wright). Kevin Z. (GRP Safety) (onsite 8am). A. Day provided construction oversight beginning at 730 am.

Health and Safety:

- GRP personnel conducted the morning safety/tailgate meeting at 7:00am. Safety topic was swing radius and to watch your footing.

Stormwater Pollution Prevention Activities: None.

Construction Activities:

- Hayden completed trenching from future metering house location to pumps.
- Hayden trenched from electrical service box at sampling shed to future metering house location.
- GRP/pipefitters continued gathering parts.

Equipment:

- Doosan Excavator
- Office Trailer/Conex
- 2 port-o-potties w/ 2 sinks
- HDPE Tracked Welder unit
- Hayden Work Truck
- GRP Work Truck
- Plate tamper
- Case Skidsteer
- Roller
- Pipetamer

Materials:

- 1 roll - 4" HDPE DR-11
- 2 roll – 1.5" HDPE DR-11
- 1-roll – 2" HDPE DR-11
- Various HDPE fittings
- Various metal pipe fittings
- 1 Roll Propex GEOTEX 104F
- 24' of 12" galvanized culvert

AECOM

Dumpsters: Rolloff Box #20411, #20856, #20474, #20957, #20500, #20186 (empty), #20923, #20874
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Notes and Discussions:

- A.Day collected PID readings at 0745 and at 13:30 along the trench and along Queeny Avenue. All readings were 0.0 ppm.
- A. Day spoke with Tim (GRP) about his plan for having the electrician onsite to get familiar with the project.
- A. Day alerted Tim (GRP) of the requirement in the spec to have at least 1 foot between HDPE piping in trench and electrical conduit.
- Due to rain, Pipefitters left at ~11am (1/2 day). Laborers and Hayden left at ~1pm.
- GRP is still waiting on parts to be able to complete piping. Since last week they have accomplished unravelling the pipe and string the pipe along the trench north of the future metering house location.
- GRP made 2 trips to FEDEX today to receive parts.

Photographs:

1. Hand excavated area around electrical service at sampling shed.
2. Looking west along newly excavated trench for piping from pumps to future metering house.
3. Looking north along electrical trench towards future metering house location.

GRP offsite at 1:30 pm.

A.Day offsite at 1:30 pm.

Signed by: 

AECOM

Daily Field Report

Leachate Management System Installation and Piping Connection to the POTW
Project No.:
AECOM Personnel: A. Day **Report No.:** 008
Contractor: GRP, Inc **Date:** 11/09/16
Weather: Sunny, 60's

Progress of work:

Oversight Activities: A.Day onsite to provide oversight of work at Solutia site for the project "Leachate Management System Installation and Piping Connection to POTW'. GRP – Site Super (Tim Grove), Hayden Foreman (Ryan Portugal), 2 laborers (Henry Poole, Damon Williams), 1 Operator (Steve Flowers), 2 pipefitters (/Josh Hanna and Chris Wright). A. Day provided construction oversight from 7am to 12:45 pm.

Health and Safety:

- GRP personnel conducted the morning safety/tailgate meeting at 7:00am. Safety topic was a review of the JSA for the day.

Stormwater Pollution Prevention Activities: None.

Construction Activities:

- Hayden completed install of 6" of sand bedding in trench from future metering house location to pumps. Sand was compacted using plate tamper.
- Hayden installed HDPE plastic liner for trench in section of impacted soil on Weisse property, at the trench corner on Queeny avenue, and at the manhole on Queeny Avenue.
- GRP installed 3-1.5" pipes in trench from future metering house to pumps. 90 degree elbows at each end with stickups.
- GRP built and installed pipe supports to hold 1.5" pipe stickups upright during backfill.

Equipment:

- Doosan Excavator
- Office Trailer/Conex
- 2 port-o-potties w/ 2 sinks
- HDPE Tracked Welder unit
- Hayden Work Truck
- GRP Work Truck
- Plate tamper
- Case Skidsteer
- Roller
- Pipetamer

Materials:

- 1 roll - 4" HDPE DR-11
- 2 roll – 1.5" HDPE DR-11
- 1-roll – 2" HDPE DR-11
- Various HDPE fittings

- Various metal pipe fittings
- 1 Roll Propex GEOTEX 104F
- 24’ of 12” galvanized culvert

Dumpsters: Rolloff Box #20411, #20856, #20474, #20957, #20500, #20186 (empty), #20923, #20874
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Notes and Discussions:

- A.Day collected PID readings at 0730 and at 12:40 along the trench and along Queeny Avenue. All readings were 0.0 ppm.
- Hayden left for the day at 11:30am as they had completed their excavations and are now waiting on pipefitters.
- A. Day and S. Smith met with Jeff Hasty (GRP) about a number of items. Notes for this document are in a separate file.
- Tim Grove (GRP) asked A. Day about 3 items
    - If a brass Ford fitting (compression fitting) could be used to transition to a barbed fitting for the connection from 1.5” HDPE to existing pump tubing. A. Day informed GRP they must submit cut sheets in an email for approval.
    - How to place the 12’ shed on the 20’ deep pad. A. Day explained 3’ behind and 5’ in front would be acceptable, but the mangate must be able to be operated and functional.
    - If GRP could use unistrut racks instead of the “threaded pipe stands” in the design drawings. A. Day explained to GRP the need to adjustability. GRP is to submit a design sketch to AECOM for approval.

Photographs:

1. Looking west at trench heading to future metering house with 1.5” piping
2. Pipe supports at metering house location
3. HDPE plastic installed in trench.
4. HDPE plastic installed in trench corner.
5. HDPE plastic installed at sewer manhole.

GRP offsite at 3:30 pm.

A.Day offsite at 12:45 pm.

Signed by: 

AECOM

Daily Field Report

Leachate Management System Installation and Piping Connection to the POTW
Project No.:
AECOM Personnel: A. Day
Report No.: 009
Contractor: GRP, Inc
Date: 11/10/16
Weather: Sunny, 60s- 70s

Progress of work:

Oversight Activities: A.Day onsite to provide oversight of work at Solutia site for the project "Leachate Management System Installation and Piping Connection to POTW'. GRP – Site Super (Tim Grove), 2 pipefitters (/Josh Hanna and Chris Wright). Jeff Hasty covered for Tim Grove when he was offsite. A. Day provided construction oversight.

Health and Safety:

- GRP personnel conducted the morning safety/tailgate meeting at 7:00am. Safety topic was to watch out when crossing the trench and to put down tools when entering/exiting the trench.

Stormwater Pollution Prevention Activities: None.

Construction Activities:

- GRP welded sections of 4" and 2" piping along queeny avenue.
- GRP welded 90 and 22 degree fittings at the sharp turn in the trench at Queeny avenue.
- GRP plans to weld 4" and 2" caps on lines near manhole for future hydrostatic testing.
- GRP plans to weld stub ups for 1.5" lines at the future metering house location.

Equipment:

- Doosan Excavator
- Office Trailer/Conex
- 2 port-o-potties w/ 2 sinks
- HDPE Tracked Welder unit
- Hayden Work Truck
- GRP Work Truck
- Plate tamper
- Case Skidsteer
- Roller
- Pipetamer

Materials:

- 1 roll - 4" HDPE DR-11
- 2 roll – 1.5" HDPE DR-11
- 1-roll – 2" HDPE DR-11
- Various HDPE fittings
- Various metal pipe fittings
- 1 Roll Propex GEOTEX 104F

- 24’ of 12” galvanized culvert

Dumpsters: Rolloff Box #20411, #20856, #20474, #20957, #20500, #20186 (empty), #20923, #20874
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Notes and Discussions:

- GRP explained to A. Day that the flange/piping required to extend from the 2” and 4” vent valves up through the roof of the building may be long lead time items. It is a specific part from the valve manufacturer. A. Day explained we would still follow specs and if the item is deemed a long lead time item we will address the issue again. Specs require the vent valves to be inside the building, but venting should occur outside of the building. Having the valves inside make them easier to access and work on. The valves are to vent to the outside to prevent any potential indoor vapor buildup.
- GRP (and all project crews) will be off tomorrow for Veteran’s Day.

Photographs:

1. Looking at welded 90 and 22 degree fittings at the sharp turn in the trench at Queeny avenue.
2. Looking east at welded and partially welded sections of 4” and 2” lines.

GRP offsite at 3:30 pm.

A.Day offsite at 11:45 am.

Signed by: